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# ENVIRONMENTAL ASSESSMENT BOARD

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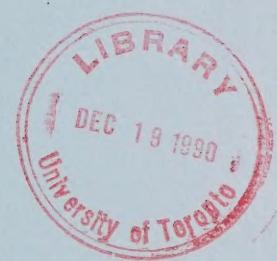
VOLUME: 270

DATE: Monday, December 10, 1990

BEFORE:

A. KOVEN Chairman

E. MARTEL Member



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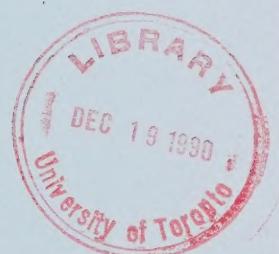
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2300 Yonge St., Suite 709, Toronto, Canada M4P 1E4



HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL  
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR  
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental  
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental  
Assessment for Timber Management on Crown  
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council  
(O.C. 2449/87) authorizing the  
Environmental Assessment Board to  
administer a funding program, in  
connection with the environmental  
assessment hearing with respect to the  
Timber Management Class  
Environmental Assessment, and to  
distribute funds to qualified  
participants.

-----  
Hearing held at the offices of the Ontario  
Highway Transport Board, Britannica Building,  
151 Bloor Street West, 10th Floor, Toronto,  
Ontario, on Monday, December 10th, 1990,  
commencing at 10:30 a.m.

-----  
VOLUME 270

BEFORE:

MRS. ANNE KOVEN  
MR. ELIE MARTEL

Chairman  
Member



A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	MINISTRY OF NATURAL
MS. C. BLASTORAH )	RESOURCES
MS. K. MURPHY )	
MR. B. CAMPBELL )	
MS. J. SEABORN )	MINISTRY OF ENVIRONMENT
MS. B. HARVIE )	
MR. R. TUER, Q.C. )	ONTARIO FOREST INDUSTRY
MR. R. COSMAN )	ASSOCIATION and ONTARIO
MS. E. CRONK )	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY )	ASSOCIATION
MR. H. TURKSTRA	ENVIRONMENTAL ASSESSMENT BOARD
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MR. J.F. CASTRILLI )	
MS. M. SWENARCHUK )	FORESTS FOR TOMORROW
MR. R. LINDGREN )	
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TOURISM ASSOCIATION



I N D E X      O F      P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>CRANDALL BENSON, Sworn</u>	48714
Direct Examination by Ms. Swenarchuk	48712



I N D E X    O F    E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
1604A	FFT Witness Statement for Panel No. 5, Volume I.	48708
1604B	FFT Witness Statement for Panel No. 5, Volume II.	48708
1605A	Source Book, Volume I re FFT Witness Statement Panel No. 5.	48708
1605B	Source Book, Volume II re FFT Witness Statement Panel No. 5.	48708
1606	Errata sheet re FFT Panel No. 5.	48708
1607	Hard copy of 516 slides re FFT Panel No. 5.	48709
1608	Description of list of photographs re FFT Panel No. 5.	48710
1609	Curriculum vitae of Crandall Benson.	48710
1610	FFT Terms and Conditions to be referred to in Mr. Benson's testimony re Panel No. 5.	48710
1611	Adaptation of a figure in Mr. Benson's witness statement.	48710
1612	Environment Canada, Land Capability Forestry Map.	48711



1           ---Upon commencing at 10:30 a.m.

2           MADAM CHAIR: Good morning. Please be  
3 seated.

4           Ms. Swenarchuk?

5           MS. SWENARCHUK: Good morning, Madam  
6 Chair, Mr. Martel.

7           I changed the seating arrangement to try  
8 to ensure that Mr. Benson can be heard since this sound  
9 system isn't as good as that one.

10          And to begin with Forests for Tomorrow  
11 Panel No. 5 we have as usual a large number of  
12 documents to be marked as exhibits. I have put  
13 together an outline of what the documents are.

14          (handed)

15          MADAM CHAIR: Thank you.

16          MR. MARTEL: Thank you.

17          MS. SWENARCHUK: There will probably be  
18 additional exhibits to file, but I believe this will be  
19 the entire list for today.

20          MADAM CHAIR: All right. Shall we start  
21 with Exhibit 1604. Do you want these to be labeled A  
22 and B, Ms. Swenarchuk?

23          MS. SWENARCHUK: As you wish.

24          MADAM CHAIR: Right. That will be  
25 Forests for Tomorrow Witness Statement for Panel No. 5;

Volume I is 1604A and Volume II is 1604B.

---EXHIBIT NO. 1604A: FFT Witness Statement for Panel  
No. 5, Volume I.

---EXHIBIT NO. 1604B: FFT Witness Statement for Panel  
No. 5, Volume II.

MADAM CHAIR: Is the source book the next exhibit, Ms. Swenarchuk?

MS. SWENARCHUK: Yes, Madam Chair.

MADAM CHAIR: That will be 1605A for Volume I and 1605B for Volume II of the source book to Witness Statement No. 5.

---EXHIBIT NO. 1605A: Source Book, Volume I re FFT  
Witness Statement Panel No. 5.

---EXHIBIT NO. 1605B: Source Book, Volume II re FFT  
Witness Statement Panel No. 5.

MS. SWENARCHUK: Madam Chair, we prepared an errata sheet and have since discovered additional errata, so we'll provide you with that tomorrow, but if we could just have the exhibit number now. I believe that will be 1606 then?

MADAM CHAIR: That's right.

---EXHIBIT NO. 1606: Errata sheet re FFT Panel No. 5

MADAM CHAIR: Are they the hard copies of the slides?

MS. SWENARCHUK: Yes. 1607.

MADAM CHAIR: That's Exhibit...?

MS. SWENARCHUK: 1607.

1                   MADAM CHAIR: Exhibit 1607 will be the  
2 hard copies of 516 slides.

3                   MS. SWENARCHUK: Yes.

4                   MADAM CHAIR: Is that how many we have  
5 today?

6                   MS. SWENARCHUK: Yes.

7                   MADAM CHAIR: For Witness Statement No.  
8 5.

9                   ---EXHIBIT NO. 1607: Hard copy of 516 slides re FFT  
10                   Panel No. 5.

11                  MS. SWENARCHUK: Mr. Martel, I have an  
12 errata sheet prepared but we're going to have to --

13                  MR. MARTEL: I thought you had one  
14 prepared and were adding to it.

15                  MS. SWENARCHUK: Exactly, and we'll  
16 retype it with the additions and provide it tomorrow.

17                  MR. MARTEL: Oh, all right.

18                  MS. SWENARCHUK: So the list of -- the  
19 hard copies of--

20                  MADAM CHAIR: Exhibit 1607.

21                  MS. SWENARCHUK: --photographs are 1607,  
22 and the list of photographs then, the descriptions will  
23 be 1608.

24                  MADAM CHAIR: Yes. Where is that?

25                  MS. SWENARCHUK: This was distributed

1 with the witness statements.

2 MADAM CHAIR: Okay, thank you.

3 ---EXHIBIT NO. 1608: Description of list of  
4 photographs re FFT Panel No. 5.

5 MS. SWENARCHUK: And the curriculum vitae  
6 for Mr. Benson, which was also distributed previously,  
7 1609.

8 MADAM CHAIR: That's right.

9 ---EXHIBIT NO. 1609: Curriculum vitae of Crandall  
10 Benson.

11 MS. SWENARCHUK: And a number of Forests  
12 for Tomorrow terms and conditions, which I don't expect  
13 to refer to today but certainly will at some point in  
14 his testimony, if we can just have an exhibit number  
15 for that.

16 MADAM CHAIR: It will be Exhibit 1610.

17 ---EXHIBIT NO. 1610: FFT Terms and Conditions to be  
18 referred to in Mr. Benson's  
testimony re Panel No. 5.

19 MS. SWENARCHUK: Then we have an  
20 adaptation of one of the figures that occurs in Mr.  
21 Benson's witness statement which he'll be referring to  
22 later this morning, and that then would be 1611.

23 MADAM CHAIR: Exhibit 1611.

24 ---EXHIBIT NO. 1611: Adaptation of a figure in Mr.  
25 Benson's witness statement.

1                   MADAM CHAIR: Why is the author  
2 anonymous, Ms. Swenarchuk?

3                   MS. SWENARCHUK: Mr. Boljkovac was  
4 particularly acidulous in doing this in the academic  
5 fashion, Madam Chair. It was in fact adapted by  
6 Forests for Tomorrow staff from the information that's  
7 already in the witness statement.

8                   MADAM CHAIR: Thank you.

9                   MS. SWENARCHUK: And next we have copies  
10 of the Environment Canada Land Capability Forestry Maps  
11 which were in the bibliography but apparently were not  
12 provided in the source book. (handed)

13                  MADAM CHAIR: Thank you. This is a  
14 single page?

15                  MS. SWENARCHUK: Yes, it is.

16                  MADAM CHAIR: This will be Exhibit 1612.

17    ---EXHIBIT NO. 1612: Environment Canada, Land  
18                    Capability Forestry Map.  
19

20                  MS. SWENARCHUK: I think the last  
21 document which we had understood was not in the source  
22 book is in fact there, but not with correct pages, so  
23 we'll just provide you with a replacement I think,  
24 though it won't need a separate exhibit number, and  
that's the article from Yugoslavia. (handed)

25                  MADAM CHAIR: Thank you. That will be

1                   exhibit -- no, that will be part of what we have.

2                   MS. SWENARCHUK: There are some  
3                   additional copies here for other parties, if they wish.

4                   And again, these won't require exhibit  
5                   numbers, but there were four other articles in which  
6                   the source book pages are not entirely correct, and so  
7                   we provided complete copies. (handed)

8                   MADAM CHAIR: Thank you.

9                   MS. SWENARCHUK: So we are ready to  
10                  begin, Madam Chair, by qualifying the expert, and I  
11                  just want to review very briefly some of the elements  
12                  of the curriculum vitae, Exhibit 1609.

13                  DIRECT EXAMINATION BY MS. SWENARCHUK:

14                  Q. Mr. Benson, you graduated from the  
15                  University of Toronto with an undergraduate degree in  
16                  Forestry and then subsequently with a Masters Degree in  
17                  Science from Syracruse University and a Masters Degree  
18                  in Science of Forestry from the State University  
19                  College of Environmental Science and Forestry in  
20                  Syracruse, New York; is that correct?

21                  A. That's correct.

22                  Q. And you were employed by the Ministry  
23                  of Natural Resources from 1969 to 1974, and you were  
24                  involved in forest management for the Ministry at that  
25                  time; is that correct?

dr ex (Swenarchuk)

1                   A. That's correct.

2                   Q. And your CV lists the locations that  
3 you worked for the Ministry. And I take it that you  
4 have experience in techniques of both artificial and  
5 natural regeneration, strip cutting when you were  
6 located in North Bay, and planting when you were  
7 located in Kapuskasing?

8                   A. That's right.

9                   Q. And from 1975 to the present you have  
10 been first an Assistant and then Associate Professor in  
11 the School of Forestry at Lakehead University?

12                  A. Correct.

13                  Q. And just to review the courses that  
14 you teach or have taught --

15                  MR. FREIDIN: Excuse me, Madam Chair. I  
16 think the witness should be sworn before he gives any  
17 evidence, including his curriculum vitae.

18                  MS. SWENARCHUK: Agreed.

19                  MADAM CHAIR: Do you object, Ms.  
20 Swenarchuk?

21                  MS. SWENARCHUK: No.

22                  MADAM CHAIR: Would you like to be sworn  
23 or affirmed? Would you approach the Board, please.

24

25                  MS. SWENARCHUK: Mr. Benson, you have

dr ex (Swenarchuk)

1       your choice of either swearing on the Bible or taking  
2       an affirmation to testify to the truth, either one.  
3       Which do you prefer?

4                   THE WITNESS: The Bible.

5                   CRANDALL BENSON, Sworn

6                   MS. SWENARCHUK: Thank you, Mr. Freidin.

7                   MR. CASSIDY: Who's thanking you.

8                   MR. FREIDIN: Thank you, Mr. Cassidy.

9                   MS. SWENARCHUK: I hope that's on the  
10          record.

11                  Q. Turning then to the courses you have  
12          taught and currently teach at the Lakehead School of  
13          Forestry, Mr. Benson, I understand that you teach an  
14          undergraduate forestry course entitled Forest Resources  
15          Management which is comprised of a study of the  
16          essential elements of the administration, organization  
17          and regulation of forestry operations for the sustained  
18          production of timber and other forest benefits?

19                  A. That's right.

20                  Q. And you teach another undergraduate  
21          forestry course entitled Forest Resources Management  
22          Plan in which a management plan for a forested area in  
23          the boreal or Great Lakes/St. Lawrence Region is  
24          prepared by the students; is that correct?

25                  A. That's correct.

1                   Q. And you also supervise undergraduate  
2 theses which are completed as a course requirement at  
3 Lakehead?

4                   A. Correct.

5                   Q. And you supervise a forestry  
6 undergraduate course which is a field school which  
7 involves a silvicultural camp in the region and forest  
8 resources management survey?

9                   A. I cover the forest resources  
10 management part of that.

11                  Q. And you also supervise a forestry  
12 undergraduate course entitled Forest Resources  
13 Management which is a directed study course for  
14 undergraduate students?

15                  A. Correct.

16                  Q. And you have taught courses in the  
17 forest technician program including forest mapping,  
18 forest management and a field school course?

19                  A. Correct.

20                  Q. And you also teach graduate courses  
21 including forestry resource management which is a land  
22 use planning and land use conflicts course including  
23 land use modeling?

24                  A. That's right.

25                  Q. And you also supervise forestry

1 masters thesis students?

2 A. Correct.

3 Q. And you have supervised so far four  
4 students of whom two are now completed?

5 A. Right.

6 Q. And you have taught forest management  
7 in Ontario for graduate students in the past?

8 A. Yes, I have.

9 Q. And your publications are listed on  
10 pages 3 and 4 of your CV and include publications on  
11 subjects of the use of modeling in management planning,  
12 integrated resource management, extensive forest  
13 management, issues of Canada's forest productivity and  
14 sustainability, and such computer information subjects  
15 as electronic spread sheets?

16 A. That's right.

17 Q. And you've consulted extensively in  
18 that these issues on which you consulted basically  
19 involve forest resources management issues?

20 A. Yes.

21 Q. And that consulting has included for  
22 a number of clients, including as we see on page 5, the  
23 Royal Commission on the Northern Environment,  
24 Management Plan Analysis -- Forest Management Plan  
25 Analysis?

1                   A. The Royal Commission study was more  
2 just on the wood supply analysis.

3                   MS. SWENARCHUK: Let me adjust the mike.

4                   Q. I'm looking at the 11th item on your  
5 list of consulting which reads:

6                   "Various reports to the Royal Commission  
7 on the Northern Environment and for OMNR  
8 regarding Crown management plans, FMAs  
9 and land use plans."

10                  Did any of that involve management plan  
11 analysis?

12                  A. Yes, it involved analysing parts of  
13 management plans, yes.

14                  Q. And just my last comment, I  
15 understand that you have paid particular attention to  
16 the issues of the Temagami area of the province and  
17 your experience in that area includes, or began when  
18 you worked in North Bay as a unit forester, then as you  
19 have been a consultant to the Bear Island Band from the  
20 area, and as an analyst of the local Temagami plans and  
21 as an author of some of the papers listed here?

22                  A. That's correct.

23                  MS. SWENARCHUK: And, Madam Chair, I'm  
24 requesting that Mr. Benson be qualified as an expert in  
25 resource management and in forest resource management

1 planning.

2 MADAM CHAIR: Are there any objections to  
3 his qualifications?

4 MR. CASSIDY: Subject to asking questions  
5 about the nature of his expertise, no further  
6 objections.

7 MR. FREIDIN: Same position, Madam Chair.

8 MADAM CHAIR: Thank you. All right, then  
9 Mr. Benson shall be qualified as an expert in forest  
10 resource management and forest resource management  
11 planning.

12 MS. SWENARCHUK: Q. Now, if you could  
13 turn then to Volume I of your witness statement,  
14 please, Mr. Benson, which has to do with sustained  
15 yield and the aim of the OMNR.

16 MADAM CHAIR: Which page are we on, Ms.  
17 Swenarchuk?

18 MS. SWENARCHUK: Page 2 of the actual  
19 text.

20 MADAM CHAIR: Thank you.

21 MS. SWENARCHUK: Madam Chair, it's our  
22 intention to merely highlight some sections of Volume I  
23 for discussion, including in that process attempting to  
24 answer the question that the Board put to us several  
25 weeks ago and, of course, we'll welcome any additional

1       questions the Board may have.

2                   MADAM CHAIR: That's fine, as long as we  
3       don't repeat the same material in the slides.

4                   MS. SWENARCHUK: No, the slides are  
5       different subjects entirely.

6                   MR. CASSIDY: We're having some  
7       difficulty back here hearing Ms. Swenarchuk. If you  
8       can just try and speak up a bit. We appreciate the  
9       fact that Mr. Benson has the better mike, but we need  
10      to hear you as well.

11                  MS. SWENARCHUK: All right. I will do  
12      what I can.

13                  MR. CASSIDY: Thank you.

14                  MS. SWENARCHUK: Madam Chair, the slides  
15      relate to the content of Volume II not Volume I.

16                  MS. SWENARCHUK: Q. Mr. Benson, with  
17      regard to the subject of the aim of the Ministry, Mrs.  
18      Koven put to you a question of the quote found on page  
19      3 of Volume I. The quote is:

20                  "An aim that includes...", this is on  
21      page 3, the third paragraph:

22                  "An aim that includes a statement to  
23      provide for other uses of the forest can  
24      only be interpreted as a motherhood  
25      statement as it gives no direction as to

1                   either the nature or the level to be  
2                   provided for other uses."

3                   And Mrs. Koven asked you if you have  
4                   specific recommendations for how the aim of the  
5                   Ministry should be stated. Would you respond to that,  
6                   please?

7                   A. Yes. I wrote down an aim, thought  
8                   about an aim and the one I came up with was the aim  
9                   should be, to manage the forests of Ontario for all  
10                  users on a sustained yield basis while maximizing the  
11                  net present worth of all the resources. Too fast?

12                  Q. Yes. You'll have to repeat and in  
13                  general speak slowly enough that the Board can take  
14                  notes, Mr. Benson.

15                  A. Okay. To manage the forests of  
16                  Ontario for all users on a sustained yield basis while  
17                  maximizing the net present worth of all the resources.

18                  Q. Now, could you expand somewhat on how  
19                  you arrived at this aim?

20                  A. Well, I think first, the first part  
21                  is the sustained yield which I think is essential in  
22                  forest management, that you want to achieve that  
23                  particular aspect.

24                  The net present worth really deals with  
25                  all the other resources, and I feel they should be

1 managed so that they are being managed on a profit  
2 basis for the province and that is one way that we can  
3 quantify those resources at this particular time.

4 Q. Now, with regard to the levels of  
5 production, how in your view should they be set; should  
6 they be set from the provincial level or from the  
7 ground level, or some other level?

8 A. Well, if you're looking at the  
9 sustained yield level for different resources it really  
10 has to be built up from the management unit level:  
11 What can a management unit produce and what future  
12 resources, timber and the other resources, and build it  
13 up from that particular point. And if you're looking  
14 at it from the province, it would be the sum total for  
15 those management units.

16 Q. And how does the temporal element of  
17 managing a forest enter into this aim, the question of  
18 management over time; how is that integrated into the  
19 aim that you propose?

20 A. The sustained yield aspect really  
21 covers the temporal part. It's the way in which you  
22 interpret the sustained yield that can affect the time  
23 part of managing the resource.

24 But really if you're managing for  
25 sustained yield where you're trying to maintain a

1       certain level of production over time, you're not just  
2       maintaining a level at this point in time to maximize  
3       anything, you're trying to maintain a level from now  
4       and as far as you can see in the future.

5                   Q. And we will be discussing the whole  
6       question of sustained yield more fully and, in fact,  
7       that is the next issue that you deal with.

8                   This is Section II of Chapter 1 from  
9       pages 5 to 10, deals with the question of sustained  
10      yield, and on page 10 you have written:

11                  "What has not been adequately...", at the  
12      very top of page 10:

13                  "What has not been adequately explained  
14                   by the OMNR at the hearings is the core  
15                   of sustained yield: Will the future  
16                   harvests of timber be lower or higher  
17                   than the current ones."

18                  And then turning back to page 5 of your  
19      paper, you indicate at the end of the third line:

20                  "More important is a recognition of the  
21                   maximum sustainable harvest from a  
22                   forest."

23                  Now, can you explain what the maximum  
24      sustainable harvest of a forest is?

25                  A. The maximum sustainable harvest is a

1       volume calculation of how much wood you could harvest  
2       off the forest forever at that particular level.

3                   Q. And how does that relate to the  
4       theory of the long-term sustainable yield?

5                   A. It would be less than the long-term  
6       sustainable yield, less -- long-term sustainable yield  
7       is a theoretical maximum. The maximum at any one point  
8       in time -- the maximum sustainable yield would be less  
9       than the long-term sustainable yield because of the  
10      structure of the forest, whether you have a  
11      preponderance of older age classes or younger age  
12      classes can affect the level of the maximum sustainable  
13      yield.

14                  The long-term sustainable yield, the  
15       theoretical high, is really only possible if you had a  
16       completely normal forest and were able to retain that  
17       completely normal forest structure.

18                  Q. Now, the Board asked you whether you  
19       could or would articulate the definition that you would  
20       like to see adopted by the Ministry for a sustained  
21       yield. And could you indicate then what that  
22       definition should be, in your view?

23                  A. Yes. A definition I came up with was  
24       for sustained yield, the harvest in any year must not  
25       be greater than the maximum sustainable harvest and

1 must sustain all life forms on the area.

2 Q. Now, is there any relation between  
3 the definition that you just stated and the statement  
4 on page 8 of your witness statement, in the second full  
5 paragraph you quote from the textbook of Davis entitled  
6 Forest Management, and the last part of that quote is:

7 "Current harvest does not necessarily  
8 equal growth but in the long run and on  
9 average it must."

10 Do you agree that that is an element of  
11 sustained yield?

12 A. Yes, that's an element of sustained  
13 yield and I think the maximum sustained yield method  
14 does allow you to achieve that objective.

15 Q. All right. Now, can you explain --  
16 in the Chapter you talk about the idea of maximum  
17 sustainable harvest, and could you explain for the  
18 Board what it is and why it is important in the  
19 definition of sustained yield?

20 And I believe in that context you wish to  
21 refer to Volume II of the witness statement, Figure A-3  
22 and A-4 as examples.

23 MS. SWENARCHUK: Those are at pages 176  
24 and 177 of Volume II.

25 MR. FREIDIN: I'm sorry, could you just

1 repeat the question, please?

2 MS. SWENARCHUK: Yes. And the question  
3 is: What is the maximum sustainable harvest and why is  
4 it important in the definition of sustained yield?

5 MR. FREIDIN: Thank you.

6 THE WITNESS: And you refer to Figures  
7 A-3 and A-4?

8 MS. SWENARCHUK: Q. Yes, I believe you  
9 wanted to do that. In any event, first of all, could  
10 you define for the Board what you mean by the term  
11 maximum sustainable harvest?

12 MR. FREIDIN: He just did.

13 THE WITNESS: I think they said it, I  
14 just did.

15 MS. SWENARCHUK: Yes. You're satisfied  
16 with the explanation he has given?

17 MADAM CHAIR: Yes.

18 THE WITNESS: But you want me to define  
19 it in the terms of these particular diagrams, that  
20 really is in comparison to the OWOSFOP method of  
21 calculating the allowable cut.

22 MS. SWENARCHUK: Q. Yes. Can you  
23 indicate then how that method would differ from the  
24 allowable cut calculation as measured by OWOSFOP?

25 A. Yes. In Figure A-3 it's really a

1 comparison between the volume that might be expected to  
2 be harvested from either method. The straight line,  
3 the dark square represents the maximum sustainable  
4 yield method; whereas the open squares represent the  
5 OWOSFOP or FMA method of determining the volume that  
6 would be harvested.

7 And as you can see, with the OWOSFOP  
8 method there is a decline that falls below the maximum  
9 sustained yield level, so there is a fair bit of  
10 fluctuation in the amount of volume that is available  
11 as calculated for this particular management unit by  
12 that method.

13 I think it's important if you're looking  
14 at providing a sustained yield from a management unit,  
15 for some form of continuity, you can see the variation  
16 for this one species is more than one hundred per cent  
17 from a low point to the high point, and that is a  
18 considerable amount of variation in the amount of wood  
19 that could be supplied from that unit.

20 What the sustained yield method would do  
21 is to at least provide a level with some continuity of  
22 that particular level.

23 Q. Now, you indicated on Figure A-3 that  
24 "The sustainable harvest method does not  
25 harvest in age-classes below rotation age

1                   and maintains a consistent volume while  
2                   the OWOSFOP method produces a declining  
3                   harvest."

4                   Now, with that in mind, can you explain  
5                   Figure A-4, please?

6                   A. Yes. Before I do, I should maybe say  
7                   for A-3 is that the level that I set for the  
8                   sustainable yield was set so that it wouldn't cut into  
9                   the younger age-classes.

10                  Then on Figure A-4 the sustainable yield  
11                  method is at the same level as in Figure A-3, but you  
12                  can see the FMA one declines and takes a drastic drop  
13                  80 years from now. That drastic drop would occur, that  
14                  if you assumed that there was no harvesting that could  
15                  take place in the 61-80 age-class.

16                  I'm not maintaining that they couldn't  
17                  harvest that or that it shouldn't be harvested at this  
18                  point in time, but just for the sake of the example,  
19                  that in 80 years if you couldn't cut the 61-80  
20                  age-class, the harvest would fall down to zero; whereas  
21                  with the sustainable yield method you would still have  
22                  a continuing harvest available and you would not be  
23                  harvesting in that younger age-class.

24                  Q. Now, I would like you to look back at  
25                  page 62 of Volume I, Figure 4-3.

1                   MADAM CHAIR: Which page is that, Ms.  
2                   Swenarchuk?

3                   MS. SWENARCHUK: Page 62. And it's  
4                   described as the area distribution at five-year  
5                   intervals of the age-classes of the spruce working  
6                   group of Ontario if OWOSFOP is fully implemented for a  
7                   rotation.

8                   Q. So, first of all, Mr. Benson, this  
9                   figure represents - I'm going to lead for a second -  
10                  wood supply of the spruce working group at the  
11                  provincial level; does it not, for the entire province?

12                  A. That's right. For the example I  
13                  worked through in the earlier chapters just to  
14                  illustrate OWOSFOP, and I use the spruce working group  
15                  for Ontario to illustrate it.

16                  Q. Can you explain then for the Board  
17                  what the figure illustrates?

18                  A. Well, what the graph illustrates is  
19                  what happens in fact in many management units, is that  
20                  the --

21                  Q. Slowly, Mr. Benson.

22                  A. I thought I was slow. It's related  
23                  to what happens in many management units, and what this  
24                  illustrates is the age-class distribution at the end of  
25                  five-year periods applying an OWOSFOP harvest.

1                   So that if you look above the No. 5, that  
2        column that has the different legend elements in it,  
3        indicate the amount of hectares in each of the  
4        age-classes and in the first -- after the first five  
5        years there is distribution of area in each one of the  
6        20 year age-classes ranging from the higher, the 120  
7        plus age-class right at the top, that part of the  
8        rectangular square that's composed of the little  
9        squares, and then as you move across the graph from  
10      left to right and you look at it, the amount of area in  
11      each age-class will change.

12                  And if you recall back with the OWOSFOP  
13      method the way it declines when you have older  
14      age-classes, you're cutting more area and that area is  
15      initially coming out of the older age-classes;  
16      consequently, your older age-classes, the amount of  
17      area in them, declines and you can see that along the  
18      top left of the graph where the 120 plus age-class  
19      eventually disappears.

20                  So it's really just tracking what happens  
21      to the age-class distribution of a forest over time.  
22      And you can track the next age-class going across from  
23      left to right, the one with the diagonal lines going  
24      from the upper left to the lower right bottom, the  
25      101-120 age-class, you can see that it eventually

1 disappears about 60 years after the harvesting has  
2 started. Similarly, the diagonal lines going from  
3 upper right to lower left disappears 65 years after  
4 harvesting.

5 After 80 years, you really have a  
6 situation where you only have five age-classes  
7 represented. And eventually that increases to six  
8 age-classes at the end of 120 years, but you've lost  
9 the older age-classes, if you apply that model  
10 acidulously.

11 Q. And, in your view, is there  
12 disadvantage, is it a negative effect on the forest to  
13 eliminate those older age-classes?

14 A. Well, the one effect I was trying to  
15 show is a matter of what age-classes are best for  
16 harvesting, it could affect the harvesting portion of  
17 it. Or if you're looking at it from the point of view  
18 of diversity, when you have a greater variety of  
19 age-classes you certainly have more diversity, the  
20 age-class diversity component, which can be beneficial  
21 for the wildlife and from the aesthetics point of view.

22 Q. Now, this figure as you described it  
23 describes what happens applying the OWOSFOP method of  
24 harvest. Looking back at the maximum sustainable  
25 harvest approach that you've described, can you

1 indicate for the Board how that approach would be used?  
2 Do you establish a level and stick to it, does the  
3 level change, is it recalculated? Could you describe  
4 that for the Board, please.

5 A. Well, you could really set the level  
6 of the maximum sustainable harvest to achieve the type  
7 of forest that you want, and it's really -- if you  
8 wanted to achieve a forest with the variety of  
9 age-classes you have at the start, you would set your  
10 level of harvesting at a level that would ensure that  
11 you would have those age-class groups right across from  
12 now until 120 years in future.

13 If you just wanted to have the five  
14 age-classes, similarly, you could set it so you could  
15 harvest it at that particular level.

16 Q. Can it be utilized with -- does the  
17 level vary, can it be recalculated at different times?

18 A. As with any allowable cut method it  
19 should be recalculated whenever there is a change that  
20 occurs in the forest, and the maximum sustainable  
21 harvest level can certainly change and should be  
22 recalculated every five years or recalculated ever  
23 year, as far as that goes, to determine what the new  
24 level is.

25 Now, theoretically it shouldn't drop

1 down. If it was the maximum sustainable harvest level  
2 last year, it shouldn't be less this year, and normally  
3 it wouldn't be unless you lost area for some reason, if  
4 you had a fire that went through, well then your  
5 maximum sustainable level would drop. On the other  
6 hand, if you have been regenerating an area and  
7 regenerating it successfully, then that level could  
8 theoretically increase.

9                   If everything remained constant,  
10 theoretically over time you could reach that long-term  
11 sustained yield level; in other words, your forest  
12 would become perfectly balanced and you would have that  
13 ideal situation. But realistically you would never  
14 really hit that level, it's sort of the star in the sky  
15 that you're aiming for.

16                   Q. Now, you've described for the Board  
17 the one problem also identified in your witness  
18 statement in the use of the OWOSFOP model, and that is  
19 the elimination of older age-classes.

20                   You also describe in the witness  
21 statement, and I would like you to summarize them  
22 briefly now, the problem of varying cut volumes. On  
23 page 11 you state with regard to OWOSFOP:

24                   "This variation in the allowable cut  
25 volumes as determined by the weighted

1                   area method has caused confusion between  
2                   the Industry and the MNR."

3                   And then on pages 14 and 15 you describe  
4                   factors that contribute to the volume fluctuations  
5                   encountered using the OWOSFOP calculations. And I  
6                   wonder if you could briefly summarize and perhaps  
7                   expand on some of those factors that affect volume  
8                   fluctuations using the OWOSFOP method?

9                   A. Okay. I think the basic thing I  
10                  don't like about the OWOSFOP method is that it's a  
11                  mechanical method and it's area base method, so it  
12                  doesn't really allow the input into managing the forest  
13                  that I think a forester should have on an area.

14                  But certainly the main point is the fact  
15                  that volume fluctuates over time, basically because  
16                  it's an area allowable cut determination method, and  
17                  because your area is going to come from different  
18                  age-classes, just based upon the weighting factor that  
19                  determines the allowable cut, you're going to end up  
20                  with fluctuating volumes over time; higher volumes if  
21                  you have more older age-classes in a forest, lower  
22                  volumes if you have more younger age-classes in a  
23                  forest.

24                  So if you're looking at sustained yield  
25                  or what are you trying to sustain from that forest,

1       this method really doesn't do it, it causes a great  
2       deal of volume fluctuation, and that's shown later in  
3       Volume II for different working groups for the  
4       management units.

5                   That really is the main point. There's  
6       other minor points of OWOSFOP that I don't think are  
7       quite as important, but nonetheless, they are the  
8       result of the particular mechanics of the method.

9                   And one of those is illustrated in Figure  
10      2-10 on page 31, and what it indicates is that if you  
11      are regenerating an area - and we have heard about  
12      intensive management - you're intensively managing an  
13      area and you hope to double the yield of the forest in  
14      the future. Well, with OWOSFOP it really has no effect  
15      on the allowable cut from the area until well into the  
16      future, and that's illustrated in Figure 2-10, that the  
17      volume from that increase really wouldn't come about  
18      until well into the future.

19                  I didn't draw a diagram for what it would  
20      be with the sustainable harvest method, but basically  
21      you could calculate it in a couple of different ways.  
22      You could either calculate it as a smooth increase over  
23      time so it would take into account the increasing MAI  
24      of the forest as it's regenerated at double the yield,  
25      or you could calculate it as a series of steps that

1 occur over time. The change in harvest would only  
2 occur as the new volume comes on stream and should only  
3 be counted if the regeneration is successful.

4 So the problem there is that - and I  
5 consider it a minor problem - is that if you are  
6 actually increasing the yield of the forest in the  
7 future, it's really not considered in the calculations  
8 until that land area is actually available.

9 In this case it worked out to about 70,  
10 75 years in the future, and that only occurs because  
11 you're starting to cut back into some of those  
12 age-classes that are the new forest at that time.

13 Another feature is that the productive  
14 land base uses, in their determination of the MAD  
15 calculation includes all the reserve area, the areas  
16 lost to fire, insects and disease, so that your initial  
17 calculation is higher than what it should be and --

18 Q. Why is that higher, Mr. Benson?

19 A. Because you're calculating on a land  
20 base that you're not actually going to be harvesting  
21 and it would be more realistic - it's not necessarily a  
22 deficiency of MAD itself, but it's something that  
23 happens when you calculate MAD because of the way the  
24 land base is controlled - that you're calculating an  
25 initial allowable cut determination that's higher than

1       you can -- than is really available.

2                          Another point is that the volume that you  
3       are going to obtain for a particular species when you  
4       do this calculation is really attained after the fact  
5       and for determining a sustainable harvest, with OWOSFOP  
6       you just can't do it under the present system. What  
7       happens is, is that your volume comes from a variety of  
8       working groups that have a variety of age or area  
9       classifications for the -- that are going to be cut, so  
10      when you put them all together how much of a particular  
11      species are you cutting in a five-year period, it  
12      depends upon dragging them out from the different  
13      working groups when you do your final cruise to figure  
14      out how much is actually there and coming up with the  
15      volume cut for that working group.

16                         I think that is best illustrated on page  
17      36 in Figure 2-15, and this is one that I did for the  
18      Temagami Management Unit. It's based upon using a  
19      version of OWOSFOP that they used at that time, and  
20      what it shows is the volume of white pine that would be  
21      harvested from that area by using the OWOSFOP  
22      calculation.

23                         And the top part, the dark squares,  
24      indicates the total volume of white pine that would be  
25      harvested. And the interesting part is, is that total

1       volume, the majority of it really comes from other  
2       working groups.

3                 How I calculated how much came from the  
4       other working groups is really an estimate, but an  
5       estimate based upon what's a proportion of white pine  
6       in the present working groups that are allocated.

7                 So what that indicates, if you just went  
8       by the calculation for the white pine working group you  
9       would end up with that white square line going across;  
10      where, in reality, the amount of white pine that would  
11      be available would be the dark squares going across.  
12      And the problem with the OWOSFOP is, the way it's set  
13      up at the present time, it doesn't really take that  
14      into consideration.

15                 Q. What management problems does that  
16      cause, Mr. Benson?

17                 A. Well, again, if you're interested in  
18      sustaining a yield or sustaining a volume of a  
19      particular species from an area, you would have to take  
20      it into account. And it's particularly prevalent for a  
21      unit like Temagami where you have a greater variety of  
22      species and a larger mixture in the working groups.

23                 MADAM CHAIR: Excuse me, Mr. Benson.  
24      This is one of these situations where we try to compare  
25      area and volume, and there are some difficulties, but

1       you just spoke a moment ago about the inflation factor  
2       of the OWOSFOP area calculations and the fact that they  
3       do take in areas that aren't necessarily available for  
4       harvest.

5                   And this seems to be working in the other  
6       direction in the OWOSFOP model because in fact they're  
7       under calculating the available volume by ignoring its  
8       existence in other working groups.

9                   Which has the greater effect; is the  
10      effect of over inflating area in any way countered by  
11      this point in the OWOSFOP model of ignoring something  
12      that is not in the primary working group?

13                  THE WITNESS: From the point of view of  
14      doing the calculations you don't get a very good  
15      estimate when you do the calculation for the initial  
16      allowable cut.

17                  You can take it into account later on in  
18      the management plan and it is taken into account when  
19      they do their operational cruising and put together the  
20      volumes and it gives you a better estimate for that  
21      particular five-year planning period, but what I'm  
22      trying to say is, is over time you have to have a  
23      better mechanism for figuring out: Well, what is a  
24      sustainable level, and you have to take it into account  
25      not just from that pine working group but from all the

1 other working groups. And at the present time it  
2 doesn't really do that.

3 MADAM CHAIR: If you were illustrating in  
4 a graph the aspects of OWOSFOP where in one situation  
5 they over estimate available harvest, in other  
6 situations they underestimate them, you would have a  
7 series of points, and if you came out to a final  
8 conclusion, would you say OWOSFOP over estimates the  
9 available harvest?

10 THE WITNESS: Madam Chairman, I haven't  
11 put one like that together yet and I'm not too sure  
12 which way it would go. I think it would depend upon  
13 the particular management unit and the factors involved  
14 that way. Overall though I would have to think that it  
15 would probably over estimate in most cases.

16 MADAM CHAIR: Because of the area  
17 calculation.

18 THE WITNESS: Because of the area  
19 calculation.

20 MADAM CHAIR: Inclusion of areas that  
21 aren't available?

22 THE WITNESS: Right. Because the white  
23 pine one is an extreme example, probably one of the  
24 more extreme examples and you wouldn't have as much  
25 volume effect with different working groups I think for

1       most management units in the boreal forest, like for  
2       spruce and jack pine, you wouldn't find as much  
3       variation that way.

4                   MADAM CHAIR: But for a timber such as  
5       white pine, that's obviously critical information in  
6       the local management unit?

7                   THE WITNESS: Yes, that's right.

8                   MADAM CHAIR: Okay, thank you.

9                   MS. SWENARCHUK: Q. Any further comments  
10      on that section, Mr. Benson?

11                  A. I think those are the main points.  
12      There are some minor points, other minor points  
13      associated with that, but I think those are the --  
14      enough.

15                  Q. While we're talking about the volume  
16      issue, could we turn to page 21 where at the top of the  
17      page you have said:

18                  "Without an accurate assessment of the  
19      scaled volumes that may be expected from  
20      the operational areas of a management  
21      unit, no reliable estimates of wood  
22      supply may be made at the operational  
23      level for management planning; thus, the  
24      wood supply to an industry from a  
25      management unit is not predictable. The

1                   necessity for linking the area and volume  
2                   harvested was noted by Baskerville."

3                   Now, are you in agreement with Dr.

4                   Baskerville's view that a closer link between area and  
5                   volume harvest are necessary in Ontario?

6                   A. Yes, as long as we are processing  
7                   wood in the mill, you should have an idea of what the  
8                   sustainable yield for that volume is rather than what  
9                   the sus -- the way it is now, it's just based on area.

10                  Q. Okay. Now, you spoke earlier about  
11                  the elimination of the older age-classes if OWOSFOP is  
12                  strictly applied. If it is applied over a rotation,  
13                  what areas would remain in the older age-classes?

14                  A. You're speaking of Ontario, or --

15                  Q. Yes, yes.

16                  A. Again, it's going to vary by  
17                  management unit. Eventually for any management unit it  
18                  would eventually end up with an almost normal forest  
19                  situation where you wouldn't have any age-classes older  
20                  than rotation age. In most cases or in many cases you  
21                  would have a situation where you eliminate the older  
22                  age-classes, dip down below rotation age into  
23                  age-classes younger than rotation age, and then come  
24                  back up again. So it would be -- it would vary for  
25                  each management unit.

1                   Q. Would there be reserves left that  
2                  could be in the older age-classes?

3                   A. For particular management units there  
4                  could be reserves left in older age-classes, yes.

5                   Q. And, in your view, would these  
6                  reserves provide a sufficient amount of older age-class  
7                  wood?

8                   A. From the point of view of, for  
9                  wildlife purposes?

10                  Q. Mm-hmm.

11                  A. I don't think it would in the long  
12                 run because if your only old age-classes are in  
13                 reserves along streams or lakes you're talking of areas  
14                 that are rather narrow in width relatively speaking,  
15                 and if you want reserves for wildlife you would want to  
16                 have it the same as the rest of the forest, you would  
17                 really want to have -- or try to provide as much  
18                 diversity as possible and you would want to provide for  
19                 two conditions; you want to provide for those species  
20                 that require smaller areas of older growth or that can  
21                 survive in smaller areas of old growth, and you want to  
22                 provide conditions that are going to provide habitat  
23                 for species that require larger areas of old growth.  
24                 And I believe just leaving reserves along streams and  
25                 lakes would not provide that habitat for both demands

1 at any one time.

2                   The other thing too is that I'm not sure  
3 how long these reserves are going to last. You can run  
4 into problems with the blowdown that can occur in these  
5 reserves, particularly if you have large clearcuts  
6 beside them. So, how long are they going to last.

7                   And it's not really -- it's sort of like  
8 a band-aid solution, I feel, in a way, it's not really  
9 planning ahead. If you're going to have older growth  
10 forests, you should be planning ahead as to how what  
11 you want and where you want it, rather than just  
12 leaving it where you run into a lake or a stream.

13                  Q. Now, over time can we be assured that  
14 those reserves would regenerate themselves into the  
15 same species that are currently left in the reserves?

16                  A. That would be extremely variable I  
17 think depending upon the species and area involved and  
18 in some cases quite likely they would, in other cases I  
19 don't think they would, they might change to a  
20 different working group.

21                  Q. Now, you're proposing the use of the  
22 maximum sustainable approach to replace the OWOSFOP  
23 approach now used by the Ministry. Would this be a  
24 difficult approach to implement?

25                  A. No, no, it's -- I think it might have

1       been difficult a few years ago mainly because it  
2       involves a lot of mathematical calculations, but with  
3       computers around now you can set it up fairly easy to  
4       do those type of calculations and you can set it up in  
5       a variety of ways, whether it's spread sheets, or you  
6       use FORTRAN program or basic program or you can even  
7       use linear programming to set it up.

8                     Q. Now, assuming that the Ministry  
9       continued to use the OWOSFOP method and to implement it  
10      in practice, is it your view that the normal forest  
11      would be achieved within or after one rotation?

12                  A. No, you wouldn't achieve the normal  
13      forest after one rotation.

14                  Q. And why is that?

15                  A. Well, because you're cutting --  
16      normal forest consists of a forest with equal area in  
17      each age-class, and if over the rotation period you're  
18      cutting different sizes of area, which you are by using  
19      the OWOSFOP method, after one rotation you're going to  
20      have different sizes of area in the age-classes at the  
21      end of that rotation period, so you will not have  
22      achieved the normal forest.

23                  You will probably be near the normal  
24      forest condition, but you won't have achieved the  
25      normal forest condition, there will still be an

1 imbalance of age-classes.

2 Q. And if it will take longer than one  
3 rotation to achieve the normal forest, will volume  
4 fluctuations continue after the first rotation?

5 A. They would still occur after the  
6 first rotation, not as drastic as during the first  
7 rotation.

8 Q. Now, using the sustained volume  
9 approach, would the normal forest be achieved after one  
10 rotation?

11 A. No.

12 Q. Would volume fluctuations continue?

13 A. Well, you shouldn't have volume  
14 fluctuations to start, so they shouldn't continue  
15 either.

16 Q. Now, with regard to the OWOSFOP  
17 approach, what assumptions about levels of regeneration  
18 success are used with the OWOSFOP approach in assuming  
19 the assumption of achieving the normal forest after one  
20 rotation?

21 Let me say that a little more briefly.  
22 What assumption about levels of regeneration success  
23 are used with the OWOSFOP approach of achieving the  
24 normal forest after one rotation?

25 A. It varies across the province and I

1 have seen figures that range from 65 per cent  
2 regeneration success to over a hundred per cent.

3 Q. Now, if the regeneration is not  
4 successful to the levels prescribed in the plans, does  
5 that affect whether or not the normal forest can be  
6 achieved in one rotation?

7 A. Yes. There's really two effects  
8 there; one, if you don't regenerate the area that you  
9 planned to regenerate, that affects it. I think the  
10 other thing too though is that if you are harvesting an  
11 area and, say, you only plan to regenerate 65 per cent  
12 of it, you really are -- what happens to that other 35  
13 per cent. You're really only planning to manage that  
14 65 per cent and the other 35 per cent you're just  
15 harvesting or exploiting, unless you have some other  
16 definite plan stated for it.

17 Q. And what does that do then with  
18 regard to achieving the normal forest and volume  
19 fluctuations in future?

20 A. Well, say, if you're only going for  
21 65 per cent regeneration success, in effect, what  
22 you're doing is reducing the land base, so your land  
23 base is declining over time, the amount of reduction or  
24 fluctuation in volume that you would expect would be  
25 greater than if you kept the same land base.

1                   Eventually because in most cases we are  
2 starting out with an older age-class, so the volume  
3 would start out higher and because you're reducing the  
4 land base, over time it would decline to a lower level.

5                   Q. And if the harvested lands regenerate  
6 to a different working group than the working group  
7 harvested, does this affect the achievement of normal  
8 forest after one rotation?

9                   A. Yes, again in two ways. First, it  
10 would affect the forest that you're taking the land  
11 from because you are reducing the land base and because  
12 it's a mechanical area type of cut calculation, you  
13 still wouldn't achieve the normal forest after one  
14 rotation.

15                  The land base that is gained for us,  
16 let's say that we're converting spruce into poplar or  
17 white pine into poplar or birch area, well that land  
18 base would be increased, and if you had an allowable  
19 cut calculated for it at a certain level at a lower  
20 land base, well then it's allowable cut could actually  
21 increase in time rather than decline.

22                  Q. So again, if harvested lands are  
23 regenerating to a different working group than that  
24 harvested, would this entail continuing volume  
25 fluctuations after the first rotation?

1                   A. Yes. I think the basic reason would  
2                   be the fact that when you're changing the land base  
3                   it's going to affect the amount of area that you're  
4                   harvesting, plus the fact that you're harvesting that  
5                   land from different age-classes with different yields  
6                   and it's going to affect it that way. The two factors  
7                   combined will cause fluctuations. The amount and type  
8                   really would depend upon the particular management unit  
9                   and would be unique for each working group.

10                  Q. Now, you explained Figure 2 --  
11                 sorry, Figure 4-3 on page 62 to the Board, this  
12                 province-wide picture of the spruce working group. I  
13                 want to put two assumptions to you now, Mr. Benson.

14                  If the regeneration of harvested levels  
15                 occurs at the level of one hundred per cent for the  
16                 first rotation, so we assume a one hundred per cent  
17                 regeneration success rate, and using the OWOSFOP method  
18                 calculation, the harvest occurs at one hundred per cent  
19                 of the allowable cut, so those two assumptions, would  
20                 volume fluctuations continue after the first rotation?

21                  A. Yes, they would, not as drastic as  
22                 during the first rotation.

23                  Q. And why would they continue?

24                  A. Because you would still have an  
25                 imbalance of age-classes as compared to a normal forest

1 distribution of age-classes.

2 Q. Now, if you could turn to Chapter 3  
3 of this volume, Mr. Benson, where you're talking about  
4 wood supply. Your conclusions with regard to wood  
5 supply starts on page 47 and 48 and refer to Table 3.1.

6 MS. SWENARCHUK: Madam Chair, a  
7 corrected version of Table 3.1 on page 49 was  
8 distributed with the interrogatory responses. I hope  
9 it has been inserted in your --

10 MADAM CHAIR: No, it hasn't been inserted  
11 in this, but we do have it. But you're going to  
12 provide something that's going to replace all the  
13 errata, or you're just going to give us the additional  
14 changes?

15 MS. SWENARCHUK: That we were not  
16 providing in the errata--

17 MADAM CHAIR: All right, fine.

18 MS. SWENARCHUK: --because we provided it  
19 with the interrogatories.

20 MADAM CHAIR: We have the interrogatories  
21 here.

22 MS. SWENARCHUK: All right. Perhaps it  
23 would be helpful if you could have that available.  
24 I'll ask Mr. Benson to wait until you have that.

25 MADAM CHAIR: And what's the number of

1           the interrogatory?

2                            MR. FREIDIN: MNR 33 and OFIA 8 resulted  
3                            in that table.

4                            MADAM CHAIR: Thank you.

5                            MS. SEABORN: I believe MOE 7(b) as well.

6                            MR. FREIDIN: Sorry, Ms. Seaborn.

7                            MS. SWENARCHUK: I have a copy here.

8                            MADAM CHAIR: We have it right here, Ms.  
9                            Swenarchuk.

10                          MS. SWENARCHUK: Q. Would you proceed  
11                          then, Mr. Benson. I'll ask you to read your  
12                          conclusions on wood supply on pages 47 and 48 and then  
13                          refer to Table 3.1 and explain for the Board what that  
14                          table represents.

15                          A. Starting at page 47 under the  
16                          Conclusions?

17                          Q. Yes.

18                          A. "On the basis of the studies that  
19                          have been completed for the province, it  
20                          is apparent that there will be a problem  
21                          to maintain the current levels of  
22                          harvest in the future. It is not a lack  
23                          of artificial regeneration that leads to  
24                          this conclusion, but the lack of  
25                          information on the regeneration that does

1 occur naturally or artificially on  
2 depleted areas. The majority of the  
3 depleted areas regenerated naturally, but  
4 scant information is available regarding  
5 the state of the regeneration.  
6 Sustainable levels of conifers, other  
7 than balsam fir, are probably being  
8 reduced as the depletion exceeds the  
9 accruals. The time and amount of the  
10 reduction will vary for each management  
11 unit. Where harvesting has occurred for  
12 some time concomitant with a lack of  
13 regeneration, the reduction in the  
14 sustainable level of harvest is now  
15 apparent (see Part II). The incidious  
16 characteristic of changes in wood supply  
17 is that they usually occur slowly over a  
18 length of time rather than as a drastic  
19 drop or rise. With no records of the  
20 changes that occur with respect to  
21 composition and growth characteristics of  
22 the forests over a period of time,  
23 declines in wood supply may not be  
24 identified or quantified, however, the  
25 generally principle of use of resource

1                   without replacing it with a future forest  
2                   of comparable quality will inevitably  
3                   lead to a decline in future wood  
4                   supplies."

5                   Q. Now, can you explain what your Table  
6 3.1 illustrates, please?

7                   A. Well, Table 3.1 puts together the  
8 productive land base from two points of view, and I  
9 just -- what I tried to do is just update the data of  
10 Honer, et al - Honer and Bickerstaff from 1985 - with  
11 more recent OMNR statistics and to see what the results  
12 would be.

13                  The essence of the report really when you  
14 look at it, you could almost ignore the fire and pest  
15 depletion part because I have assumed that all that is  
16 naturally regenerated however much of that occurs, the  
17 same way that Honer and Bickerstaff did.

18                  So the most important part of the table  
19 is the last row, the difference, which is the  
20 difference between the accruals and the depletions, and  
21 what that shows is how much land is depleted compared  
22 to the land that is regenerated. And in both cases it  
23 comes out as a negative figure. So it merely indicates  
24 that of the land that's being harvested, it's not being  
25 regenerated.

1                   Q. Now, on page 42, Mr. Benson, you have  
2                   said about halfway down the page --

3                   MR. FREIDIN: What page?

4                   MS. SWENARCHUK: 42.

5                   MR. FREIDIN: Thank you.

6                   MS. SWENARCHUK: Q. Paragraph C-1:  
7                   "If the land base is reduced by the  
8                   unplanned conversion to another working  
9                   group, the allowable cut is not a  
10                  realistic calculation, it is merely a  
11                  mathematical exercise. A realistic and  
12                  practical allowable cut for sustained  
13                  management would be based on an area of  
14                  land that can be regenerated back to the  
15                  original working group."

16                  Now, is it your view that such unplanned  
17                  conversions have occurred in Ontario?

18                  A. Yes, they have.

19                  Q. And is it your view that there are  
20                  management units for which the allowable cut is  
21                  unrealistic and merely a mathematical exercise?

22                  A. Yes, I'd say there are some that are  
23                  that way, yes.

24                  Q. Do you consider this a wide-spread  
25                  problem?

1                   A. Well, I don't think OWOSFOP is a good  
2 method for calculating a sustained yield method -- a  
3 sustained yield cut, so I would have to say it is wide  
4 spread.

5                   Q. And on page 48, as you read a moment  
6 ago, you indicate:

7                   "Sustainable levels of conifers other  
8 than balsam fir are probably being  
9 reduced as the depletion exceeds the  
10 accruals."

11                  Now, are these the unplanned conversions  
12 that you were referring to on page 42?

13                  A. That would be part of them. I think  
14 again it varies across the province. The Temagami  
15 area, for example, there's the problem where the white  
16 pine areas have been converted to white birch, poplar  
17 and some of the tolerant hardwoods and probably also to  
18 balsam fir.

19                  MS. SWENARCHUK: Can we stop there for a  
20 lunch break and start the next chapter after lunch?

21                  MADAM CHAIR: Yes, we can, Ms.

22                  Swenarchuk. We will be back at 1:30.

23                  ---Luncheon recess taken at 11:55 a.m.

24                  ---On resuming at 1:40 p.m.

25                  MADAM CHAIR: Good afternoon. Please be

1 seated.

2 MS. SWENARCHUK: Q. Mr. Benson, if you  
3 would turn to Chapter 4 of your Volume 1, Integrated  
4 Resource Management or Holistic Management.

5 There are a number of statements in the  
6 chapter that I will ask you to explain for the Board,  
7 and the first one is on page 52, it's the last sentence  
8 of the paragraph on the page in which you've said:

9 "The OMNR have dodged the critical issue  
10 of managing all the resources of the  
11 forest by relying on classical methods to  
12 determine production of trees only from  
13 the forest."

14 Would you expand on what you meant by  
15 that statement, please?

16 A. Well, basically all their management  
17 plans are concentrating on is in the title of the  
18 management plan, timber production or timber management  
19 planning manual rather than managing the whole  
20 resource.

21 The complaint I would have is that  
22 instead of just trying to max -- or trying to produce a  
23 certain amount of timber, they should be looking at how  
24 much of the other resources, what amount do they want  
25 to produce of the other resources for a particular

1 management plan.

2 They don't really address that from the  
3 point of view of determining how much of the other  
4 resources they can produce; they address it from the  
5 point of view of particular situations when they run  
6 into them, rather than looking at it as -- looking at  
7 them as resources that could be managed.

8 Q. Now, the Board has heard evidence  
9 that resources such as fisheries, for example, are  
10 addressed through fisheries management plans. In your  
11 view, does that compensate for the fact that a timber  
12 management planning focuses only on timber?

13 A. To manage a given area it would be  
14 best to have a management plan for that particular area  
15 rather than a number of management plans. If you want  
16 to have a management plan for all the different  
17 resources, you're going to get a number of different  
18 ways of trying to manage the same area, and certainly  
19 that has happened in the past and probably still is.

20 Q. Now, on page 53 of the witness  
21 statement you have written, seven lines from the top:

22 "Fundamental in the management of  
23 multiple resources is the realization  
24 that the production of all resources may  
25 not be maximized."

1                   And would you expand on that for the  
2                   Board, please?

3                   A. Yes. Basically that relates to the  
4                   diagrams that I show later on, Figures 4-1 and Figures  
5                   4-2 on pages 60 and 61 respectively. It just shows the  
6                   production levels that are possible at different  
7                   rotation ages for a theoretical normal forest.

8                   And I guess the critical point there is,  
9                   is that what rotation age do you choose, because  
10                  whatever rotation age you choose determines the levels  
11                  eventually or theoretically that you can achieve for  
12                  the production of the other resources.

13                  The problem being is, is that if the  
14                  maximum production occurs at the peak of the MAI and if  
15                  they peak at different rotation ages, you cannot  
16                  maximize any one of them without the others suffering.  
17                  If you want to try and maximize them all, it's  
18                  impossible. So you have to make a decision somewhere  
19                  between them, or somewhere along the line and decide at  
20                  which level or at what level are you going to be  
21                  satisfied with the level of the production of that  
22                  particular resource.

23                  Q. Now, how does the current management  
24                  planning system of the Ministry address this problem?

25                  A. Address the problem of...?

1                   Q. Of different rotation periods  
2 necessary for maximizing different resources. Does it  
3 address that problem at all?

4                   A. No, not really because there're  
5 separate plans. You do have land use guidelines with  
6 targets in them, and then you have timber management  
7 plans that have timber production targets in them, but  
8 they don't really relate the harvesting part to the way  
9 it's going to affect the achievement of the other  
10 target levels.

11                  Q. On page 55 in the first full  
12 paragraph under the section entitled Expectations of  
13 Users, you indicate midway through the paragraph that  
14 production functions for the various other resources  
15 are not quantified for the area of the undertaking.  
16 And do you have additional comments on that statement?

17                  A. Well, that's the basic problem of  
18 trying to manage an area, if you have a management  
19 unit, what level of these other resources can you  
20 produce, how many moose can you produce at what  
21 particular rotation? We don't really know those  
22 particular functions for different management units.

23                  Or if you're looking at aesthetics,  
24 what's the best way to produce the highest level of the  
25 aesthetics. We don't really know those -- we don't

1 know those production curves at this time. We might  
2 know the shape of them, but we may not know just where  
3 they peak for sure or at what level they're going to  
4 hit.

5 Q. Is it your view that such production  
6 functions should be established for other resources  
7 other than timber and utilized in planning?

8 A. If you're going to manage the forests  
9 for more than timber, then you want to know what you're  
10 managing it for and how much of it you're managing it  
11 for, yes, you do need them.

12 Q. Now, on page 56 you have written in  
13 paragraph (b):

14 "The method the OMNR uses to arrive at  
15 the compromised decisions that must be  
16 made in the management of multiple  
17 resources is not clear. Methods do exist  
18 for reaching rational compromise  
19 solutions to complex multiple use  
20 problems."

21 Would you expand on that statement,  
22 please?

23 A. There's two aspects there. Expand on  
24 the Ministry part or on how do you reach rational  
25 solutions?

1                   Q. Both.

2                   A. Well, the first part's fairly easy,  
3 it's not clear, and I really don't know how they arrive  
4 at their decisions that way.

5                   Q. Now, when you say it's not clear,  
6 with reference to what? Are you speaking of --

7                   MR. FREIDIN: Well, I would like the  
8 witness' evidence here, Madam Chair. You can ask in  
9 reference to what I'm sure the witness has, as opposed  
10 to Ms. Swenarchuk leading him and suggesting what the  
11 answer is, I would like to hear this witness' evidence  
12 not Ms. Swenarchuk's, please.

13                  MS. SWENARCHUK: Q. Mr. Benson, in your  
14 analysis of management plans both for Forests for  
15 Tomorrow and in other contexts, have the plans  
16 indicated clearly in your view how the compromised  
17 decisions were reached?

18                  A. No, it's not clear to me. I was  
19 going to refer more to my own experience when I have  
20 looked at plans personally and had suggestions, and I'm  
21 not sure, well, what consideration did they give for  
22 your opinions, and how are they considered, and what  
23 effect do they have on the planning process, I have no  
24 idea.

25                  Do you want me to answer the second part

1 of that?

2 Q. Yes, please.

3 A. The multiple use problems, trying to  
4 reach rational solutions to them, there's a variety of  
5 techniques and ways you can do. One of the largest  
6 problems is the fact that you're dealing with  
7 quantitative and qualitative type of data.

8 When you're dealing with quantitative  
9 data alone you can certainly come up with a solution if  
10 you're trying to maximize it alone; if you're dealing  
11 with qualitative data also, it poses an additional  
12 problem.

13 There are ways of dealing with  
14 qualitative data by ranking it and certainly there are  
15 ways to make a decision when you're dealing with  
16 qualitative data and it's just a matter of applying the  
17 particular methods. The problem is, is that they're  
18 somewhat more subjective and can be questioned, but you  
19 can use methods that do lay down the format for the way  
20 you made a decision so that people can understand that  
21 format.

22 The very simple example of a qualitative  
23 method would be that if you're trying to make a choice  
24 you set a priority, that if you wanted to buy, say, a  
25 necktie and if you wanted to buy a necktie that was

1       blue, you would go -- a priority decision, if you  
2       looked at decisions, you'd take a look at the ties that  
3       are blue and buy the one that is blue, period. Now,  
4       that's a very simple example where if you just use one  
5       criteria, if you're trying to make a qualitative  
6       decision.

7                 If you have a number of areas that you're  
8       interested in, it's a matter of making it a bit more  
9       complex and perhaps going by order of priority, what  
10      you consider are the most important elements in a  
11      qualitative decision, you can weight them, there are a  
12      number of different ways of arriving at a decision  
13      qualitatively.

14                 The important point I think is that  
15      whatever methods that's used, it be set up and it be  
16      clear to people just exactly how is that decision  
17      arrived at.

18                 Q. And what change would you suggest  
19      should be made in the Ministry's processes to make that  
20      decision-making mechanism more clear?

21                 A. I think to decide upon a method that  
22      they're going to use and to make it clear that they're  
23      using that method so that people that are participating  
24      in the process know what method is being used and what  
25      the results of it are.

1                   Q. Now, on page 59, beginning at the  
2 bottom of that page, you outline what you consider to  
3 be the planning elements necessary to optimize the  
4 management of the forest for all resources. And I  
5 wonder if you would review them for the Board and  
6 explain how those are the necessary elements in your  
7 view?

8                   A. Well, I listed four different steps  
9 that I think that are important if you're going to plan  
10 for the different resources here, and the first one is  
11 one we covered already, determine what the production  
12 levels are for the resources that you're interested in;  
13 and (b) determine the levels of production desired by  
14 the users of the forest. That's somewhat more  
15 difficult to determine sometimes because you might have  
16 to deal with the users and find out exactly what is it  
17 that they want from the forest; (c) determination of  
18 the management procedures that will maximize user  
19 satisfaction or minimize their dissatisfaction. That  
20 can be one of these qualitative types of models where  
21 you try to decide which type of management is going to  
22 best satisfy the demands and needs of the users or  
23 dissatisfy them the least; and, finally, determine  
24 which management procedure will optimize the production  
25 of all resources.

1                   Now, optimize -- if we go by the aim that  
2 I gave earlier, it would be to maximize the further net  
3 worth of the production of all the resources. The way  
4 for determining how to optimize production of all  
5 resources, there's different procedures that you can  
6 use for that, but I think the basic premise is the  
7 same, it's a matter of looking at what the area can  
8 produce, what do you want to produce from that area for  
9 what users and, then, how do you best set up the  
10 management procedures to produce those different  
11 levels.

12                  And certainly part of the problem we have  
13 right now though is the fact that, well, we don't know  
14 for all these areas what we can produce by different  
15 management techniques and -- well, that leads on later  
16 on into one of the other chapters when I make a  
17 suggestion there as to what I think the solution to  
18 that part is.

19                  Q. How does the use of the maximum  
20 sustained harvest approach to allowable cut calculation  
21 relate to the use of these four planning elements?

22                  A. Well, where it would come in is at  
23 the part (d) where you determine what particular  
24 rotation and effect you'd be choosing whenever you pick  
25 a rotation. I think it's one of the questions that

1       the -- that was asked, maybe I wrote down some points  
2       in response, I believe, it was to your question --

3                   MS. SWENARCHUK: Let me just remind the  
4       panel of the question, and we weren't entirely clear on  
5       it, so perhaps you'll clarify it if the answer is not  
6       complete enough.

7                   At the scoping session you referred to  
8       this chapter and Mr. Benson's discussion of different  
9       rotation periods on pages 53 to 55, and you asked  
10      whether the rotation is site-specific. And, for  
11      example, can moose be moved around after the timber  
12      cuts, or should they have site-specific areas  
13      presumably set aside, not cut. I guess that was the  
14      question, and that's the question that Mr. Benson  
15      attempted to answer.

16                  Yes, Mr. Freidin?

17                  MR. FREIDIN: When you say -- the  
18       question was: Are you saying that this rotation is  
19       site-specific; do you mean site-specific areas cut  
20       every 35 years, was the way the question was put.

21                  MS. SWENARCHUK: Okay. I didn't get all  
22       that.

23                  MADAM CHAIR: Yes. Well, I think Mr.  
24       Benson you understood the question when we discussed  
25       it; and, that is, the Board wanted to know when you're

1 talking about optimum rotation ages for non-timber  
2 values, are you suggesting that in the instance of  
3 moose, which you use as an example, that you would have  
4 to cut a geographic area where you wanted to produce  
5 moose every 35 years, or would that not be the case,  
6 would you provide a certain amount of forest throughout  
7 the area of the undertaking that would always be cut at  
8 the optimum rotation age?

9 THE WITNESS: Okay, I didn't understand  
10 the original question, I think I do now, and I was  
11 getting more confused, but I'm clear now I believe.

12 I think the answer to your question is  
13 really both; you could have a specific area or you  
14 could have it within another area. Now, within another  
15 area it would still be somewhat specific. It relates  
16 to the way I was trying to answer your question before  
17 because I think when you look at the production there's  
18 really two separate elements.

19 You could have a specific spot that you  
20 set aside like for aesthetics, if you want to maximize  
21 aesthetics for a waterfall, you just separate that  
22 particular area, there is no way that you would apply  
23 that to a whole management unit, so that would be a  
24 separate area.

25 The same thing then would apply if you

1 had an area that was for moose production, you could  
2 separate that particular area and say, this is for  
3 moose production and manage it, say, on that rotation  
4 of 35 years.

5                   MADAM CHAIR: Mm-hmm.

6                   THE WITNESS: On the other hand, you  
7 could take a look at the whole forest for moose  
8 production and try to manage it for other resources  
9 including timber and come up with, say, a rotation of  
10 nine years, in which case you're not maximizing moose  
11 production but you still would be attaining a certainly  
12 level of moose production plus other uses for other  
13 users.

14                  MADAM CHAIR: Which is what MNR is doing,  
15 is doing in a similar way with their planning system  
16 now?

17                  THE WITNESS: Yes.

18                  MADAM CHAIR: In other words, providing  
19 some moose habitat--

20                  THE WITNESS: That's right.

21                  MADAM CHAIR: --in conjunction with  
22 timber management.

23                  THE WITNESS: That's right. There's a  
24 question of whether it's the best type of moose habitat  
25 the way that it's being applied, but --

1                   MADAM CHAIR: And what is your preference  
2 out of those three?

3                   THE WITNESS: I think you need all three  
4 within a management unit, and certainly if you have --  
5 the choice really depends upon what the users of the  
6 particular area want and what they feel are important.

7                   Plus I also feel there's a certain  
8 obligation on the part of the Ministry to provide  
9 certain elements. If, for example, you have -- well,  
10 again, I suppose something that's very scenic or  
11 historical, well then, it should be set aside and  
12 separated, like -- or something rare and endangered, it  
13 should be set aside and treated as a separate entity  
14 management purposes.

15                  MADAM CHAIR: Those are the easy ones  
16 though.

17                  THE WITNESS: Those are -- right. If you  
18 have the hard areas, well then, I think it's a matter  
19 of where you have -- you're going to take lumps no  
20 matter which way you make a decision, but I think the  
21 important thing is, is to make it clear as to what  
22 you've decided to manage for and the levels that you've  
23 decided to manage for and if there is any serious  
24 objections to that, well then, people can push this way  
25 or that way to come to a more equitable level of

1 management.

2                   But you have to know what it is you're  
3 trying to produce and make it clear to the people so  
4 that they can tell whether they like it or they don't  
5 like it. If it's not clear, well then, you're usually  
6 arguing about items that don't really count too much.

7                   MS. SWENARCHUK: Does that answer the  
8 Board's question?

9                   MADAM CHAIR: Yes, it does. Thank you.

10                  MS. SWENARCHUK: Q. Moving right along  
11 now to Chapter 5. On page 65, Mr. Benson, you've  
12 indicated about halfway down the page:

13                  "The LTSY...", or long-term sustainable  
14 yield,

15                  "...of this area is 31,871,902 cubic  
16 metres", and you indicated how you got  
17 that.

18                  "This final figure is sufficient to meet  
19 the provincial timber production target  
20 of 25.8-million cubic metres and probably  
21 the other documented timber production  
22 target of 33.9-million cubic metres.

23                  The higher target could likely be met  
24 considering the variety of estimates for  
25 productive forest lands. It means that

1                   the natural forest, if replaced with a  
2                   similar forest, will be sufficient to  
3                   meet the production policy target."

4                   Now, can you expand on that and explain  
5                   for the Board the source of your data and the basis of  
6                   that conclusion, please?

7                   A. Well, basically all I'm saying there  
8                   is that the long term -- the theoretical maximum for  
9                   the forest, taking the average MAI for Ontario, times  
10                  the total productive area would give you that figure  
11                  of -- and that that figure of the natural forest as it  
12                  is now is enough to meet the production target, and  
13                  more than the production target, and that if you  
14                  replace that forest with a natural forest, you would  
15                  still have enough volume on a sustainable basis to meet  
16                  the production target plus.

17                  So really it's a question then of what  
18                  the concern really is, is then for more intensive type  
19                  of management to try to increase that production.

20                  MR. MARTEL: Can I ask a question,  
21                  because you're basing this on the forest production  
22                  policy as envisaged many years ago, it seems to fly in  
23                  the face of what we've heard, that we have to have this  
24                  sustained yield if we're going to meet the requirements  
25                  of Industry in the years ahead. This statement seems

1 to be directly contradictory to most of the material we  
2 have received to date.

3 In other words, if I were to say to you:  
4 Well, why are we involved in very expensive  
5 silvicultural practices, regeneration and scarifying?  
6 If it would just happen naturally, where have we got  
7 sold on the idea we have to invest so heavily?

8 THE WITNESS: That's a good question and  
9 I'm not too sure where we got sold on it, but I  
10 don't -- certainly I don't think it's necessary and I  
11 don't think it's wise that we should invest heavily  
12 into trying to grow the second forests of Ontario, not  
13 just from the point of view that I think we could  
14 attain it naturally, but also from the point of view  
15 that I don't believe it's a very wise investment.

16 Now, that doesn't answer your question as  
17 to how and where it got sold, but I think maybe it's a  
18 developmental type of thing in forestry. As foresters  
19 I'm sure we pushed it too that we have to practice more  
20 intensive management because it's part of our art and  
21 trade, and I have to admit, I used to feel that way  
22 myself, but I have changed because I don't think it's  
23 really a very good investment dollar wise and I think  
24 there's a cheaper and better way that we can achieve  
25 that.

1                   So part of it perhaps is due to our  
2 education and our idea that we have to keep improving  
3 the situation; part of it perhaps is a structural thing  
4 within a Ministry where the Ministry tries to keep  
5 increasing their budget, it's -- I know in the States  
6 this is one thing they found in the Forest Service,  
7 this is part of the motivation for intensive  
8 silviculture, that by increasing your budget it  
9 increases your station in life, et cetera, and  
10 increases the power of your organization.

11                  Perhaps that's the motivation for some  
12 people. I think for the average unit forester I think  
13 they're really just trying to do their best in the best  
14 way that they think is possible, but haven't really  
15 looked at all of the alternatives, instead you get  
16 stuck in a bit of a trap as to how you should manage  
17 your area and don't really examine all the alternatives  
18 that are possible and whether those alternatives will  
19 meet the goal that you want.

20                  MR. MARTEL: Has part of that been thought  
21 that it's been indicated that if we don't do this we  
22 will not have adequate wood supply. I mean, that's the  
23 concern of the public, you spend hundreds of millions  
24 of dollars in the annual budget in the Province of  
25 Ontario in intensive management. If you don't need to

1 do it heaven forbid why would we be taking money for  
2 intensive management rather than putting it into child  
3 care or something like that, why --

4 THE WITNESS: Well, that's sort of one of  
5 the arguments that I would use for more extensive  
6 management, because then people are going to catch on  
7 to that particular point after a while and ask the same  
8 question. You're asking too the question: Well, will  
9 there be a problem with timber supply in the future,  
10 and this seems to be an answer that goes up and down.  
11 It's like a bouncing ball, it seems; one day we have  
12 too much and the next day we don't have enough timber.

13 MR. MARTEL: Like power.

14 THE WITNESS: I beg your pardon?

15 MR. MARTEL: It's like power, Hydro; one  
16 day we haven't got enough and the next day we've got  
17 too much, and then the next day you advertise to try  
18 and get people to use more, and then you tell them to  
19 turn their lights off at Christmas.

20 THE WITNESS: And about the only thing  
21 that's constant is the price keeps going up.

22 But I think from the timber point of view  
23 what we have to figure out is -- you know, I know the  
24 Industry has what they want to get from the area, or  
25 think they know what they want to get from the area

1 now, what they want to get from the area in the future,  
2 but I don't think that's really the question that we  
3 should be trying to answer in managing the forest.

4 The question should be is: What do we  
5 want to produce from that area and what can we afford  
6 to produce from that area, and then let the Industry  
7 develop around that particular amount.

8 Right now what you're doing is trying to  
9 meet the demands of an industry, what they think it  
10 might be in the future, and you're asking the people of  
11 Ontario to pay to meet that demand, which I really  
12 don't think is fair and sooner or later the people of  
13 Ontario are going to catch on to that, plus the fact  
14 that if regeneration figures, to me anyway, indicate  
15 that even with that investment you're not regenerating  
16 it back to the forest that it was before, which is  
17 supposed to be the forest that's going to meet the  
18 demands of Industry.

19 MS. SWENARCHUK: Q. And what figures are  
20 you relying on when you reach that conclusion, Mr.  
21 Benson?

22 A. None particular, I'm just -- you can  
23 go through this --

24 Q. What sources of data?

25 A. Well, there's different sources of

1 data, I would say the Ministry statistics, the  
2 different surveys that have been done, regeneration  
3 surveys. I'm trying to recall the name, there's a  
4 fellow from Alberta, Kuhnke.

5 Q. Kuhnke.

6 A. Kuhnke.

7 Q. Yes. K-u-h-n-k-e Statistics.

8 A. There's several surveys that have  
9 been done along that particular line, and I guess my  
10 own table that I did earlier, Table 3.1, really shows  
11 the same situation where you're not really regenerating  
12 all the areas that are being harvested at the present  
13 time.

14 Q. I think this discussion is going to  
15 continue during the next few chapters, so if you wish,  
16 I'll just proceed to the next question, coming back to  
17 this question. On page 68, Mr. Benson, again in the  
18 first paragraph, fourth line down, you've said:

19 "Actual volumes harvested per hectare  
20 vary considerably by management unit but  
21 average 113 cubic metres per hectare for  
22 the province."

23- And I'll ask you to take the Board  
24 through Table 5 in a moment.

25 "Industry estimates of future yields per

1                    hectare have been up to 71 cords per  
2                    hectare or 422 cubic metres per hectare  
3                    and are unduly optimistic."

4                    First of all, could I ask you to go to  
5                    Table 5 which begins on page 73 and explain to the  
6                    Board what this table represents and what the source of  
7                    your data was for it?

8                    A. Table 5.1 on 73 was based on data  
9                    supplied at the hearings regarding the past cut on  
10                  management units by area and by volume.

11                  And all I did was to summarize the  
12                  information that was available by area and by volume,  
13                  and for most cases the information was by five-year  
14                  periods; where not, it would be so indicated, then I  
15                  divided the volume by the area to come up with the  
16                  cubic metres per hectare figure to give you an  
17                  indication: Well, what's the average yield per  
18                  management unit.

19                  So really all it shows is just what the  
20                  average yield per management unit was. This would be  
21                  based on scaled volumes for different management units  
22                  across the province.

23                  Q. And with regard then to the Industry  
24                  estimates of future yields -- back to page 68 then,  
25                  with regard to the Industry estimates of future yields

1 per hectare, why do you consider the suggestion of up  
2 to 70 cords per acre unduly optimistic?

3 A. Well, it's a figure you might use for  
4 some area, but it would be very limited area, it's not  
5 at figure you would use for the whole province. An  
6 average of 113 cubic metres per hectare, to try to  
7 increase that to 422 would -- well, it's unduly  
8 optimistic. I think even to expect to double the  
9 yields is very, very optimistic and --

10 Q. And why is that?

11 A. Well, I think we're going to have  
12 trouble enough maintaining the yields that we have off  
13 our forests without worrying about increasing them at  
14 the present time.

15 MR. MARTEL: Did you say we would be  
16 optimistic even just holding our own based on the --  
17 and I ask that based on the amount that's being spent  
18 on regeneration and scarifying and so on, given that  
19 some of it's going to be allowed to regenerate  
20 naturally, one would assume that you would get roughly  
21 the same amount back.

22 If you've got a lot invested in certain  
23 areas why would it be, in your opinion at least, why we  
24 wouldn't at least be able to hold our own plus, based  
25 on the amounts we're spending?

1                   THE WITNESS: Well, the plantations that  
2 we've put back in that have been successful might hold  
3 a status quo, but they only represent about a third of  
4 the cut-over. Now, the big question mark is: What's  
5 happened to that other two thirds, where is it going  
6 and what are the volumes from it going to be?

7                   And that's where I think it will -- it  
8 just won't add -- we'll be lucky if we add up to the  
9 same yield as what we have at the present time.

10                  MR. MARTEL: You think that other two  
11 thirds is not going to come back nearly as successfully  
12 as the original -- as what was there originally before  
13 we harvested?

14                  THE WITNESS: Yes, certainly it's going  
15 to regenerate, but what is it going to regenerate to;  
16 is it going to regenerate to what we want, are the  
17 yields per hectare going to be the same, those  
18 questions -- and I guess the time period over which it  
19 takes to regenerate, they all affect the yield per  
20 hectare.

21                  MR. MARTEL: Plus you lose some  
22 production area?

23                  THE WITNESS: Plus we lose some  
24 production area. I don't think we create deserts, we  
25 may create some wet spots for a while and so on, but

1       certainly we lose area in other ways too; we lose it to  
2       roads, we lose it to gravel pits, and I suppose we lose  
3       it to wilderness areas, et cetera, it's lost to timber  
4       production.

5                   I think we lose it more in the sense that  
6       we're not regenerating it after it's harvested as well  
7       as possible, whether that's by extensive or by  
8       intensive methods, and personally I don't see  
9       dollarwise that it's worthwhile intensively. That's  
10      one basic argument against it, the dollar part.

11                  MADAM CHAIR: Mr. Benson, in Table 5.1,  
12       did you account for the variability in the average  
13       yields by management unit? In other words, for those  
14       management units where there were higher yields, did  
15       you ascertain whether that was co-related with the  
16       extent of plantations or artificial regeneration?

17                  THE WITNESS: No. I think part of these  
18       average yields are going to be -- the difference are  
19       going to be due to errors that were made in measurement  
20       of areas that were cut, also the areas that are  
21       reported might not exactly match the same areas that  
22       the volumes came from. So you might have had a year  
23       where there was no cut, or a year where there was more  
24       cut, but it doesn't match the volume figure.

25                  So I think you pretty well have to go by

1       the average rather than by the particular management  
2       unit, unless you took it over a period of years.

3                   MADAM CHAIR: Well, that's fine. It  
4       wouldn't have changed your conclusion on page 68, but  
5       it would have led to a higher average than 113?

6                   THE WITNESS: No.

7                   MADAM CHAIR: I imagine if you had taken  
8       out areas where there was no artificial regeneration?

9                   THE WITNESS: No, I don't.

10                  MS. SWENARCHUK: Q. Well, Mr. Benson,  
11       would you assume -- or to your knowledge, amongst these  
12       areas harvested and reflected in this table, are there  
13       areas where plantations were being harvested at this  
14       time?

15                  A. Plantations being harvested, I'm  
16       sorry, I missed that. No, not as far as I know there  
17       wouldn't be.

18                  MADAM CHAIR: Because you stopped in  
19       86-87 was the year -- the last year you looked at?

20                  THE WITNESS: Right. These harvested are  
21       only for the last five years, the most recent five  
22       years I believe of the --

23                  MADAM CHAIR: So it doesn't reflect, in  
24       other words, the yield that can be expected from  
25       artificially regenerated areas.

1                   THE WITNESS: No, not at all, no. This  
2       is actual yield from the area.

3                   MADAM CHAIR: Thank you.

4                   THE WITNESS: Actual yield from the area.

5                   MADAM CHAIR: Thank you for that  
6       clarification.

7                   MS. SWENARCHUK: Q. As you indicated a  
8       few moments ago I think, Mr. Benson, that you consider  
9       it unrealistic for the Industry even to consider it  
10      possible to double volume yields. Did I hear you  
11      correctly?

12                  A. That's correct.

13                  Q. Would you expand upon that, please,  
14       why do you consider it unrealistic to talk even about  
15       doubled volumes?

16                  A. Well, I think for some of the reasons  
17       we went through there before, the fact that we're not  
18       really regenerating all the areas now, so that even if  
19       you invested all the -- the amount of money that's been  
20       invested now it's not going to double the yield in  
21       total.

22                  Let's say if we spent enough money to  
23       intensively treat all the area that we harvested  
24       silviculturally, would we double the yield then? Well,  
25       I don't think we would because I don't think our

1 intensive silviculture is that successful to ensure  
2 that you could double yield that way, we don't have the  
3 super trees that would increase the yield that way.

4                   And I guess the other point is that when  
5 you take a look at yield: What type of yield are you  
6 trying to double? Are we trying to increase the number  
7 of conifers on an area and double that yield, is that  
8 what we want 90 years, a hundred years down the road,  
9 or do we want to double the yield of hardwoods down the  
10 road in 60, 50 years?

11                  And for a given area has a certain level  
12 of production, it can produce a certain amount of wood.  
13 If you're looking at the conifer part, which usually we  
14 look at, to try to keep that forest in conifer and to  
15 try to increase the yield from that forest for conifer  
16 alone it's very difficult to do, and I don't think we  
17 have the capability to do that at the present time,  
18 regardless of the dollars we spend on it.

19                  Q. Now, the Board asked you a question  
20 specific to this chapter, Mr. Benson, on page 69. Your  
21 statement was put to you by the Board, beginning in the  
22 third line:

23                  "While it is perhaps fortunate for future  
24 timber supply that less than the  
25 inflated allowable cuts as calculated

1                   using OWOSFOP are being harvested, it  
2                   does raise the question of why it is  
3                   necessary to increase the production by  
4                   using expensive silvicultural techniques  
5                   in an attempt to increase the  
6                   productivity of the forest."

7                   And the Board asked whether you have  
8                   confidence that there is sufficient future supply  
9                   regardless of whether expensive silvicultural  
10                  techniques are used or not.

11                  And as part of the same question, can we  
12                  meet future timber demands without investing in  
13                  expensive silviculture, solely by depending on natural  
14                  regeneration. Would you respond to those questions,  
15                  please?

16                  A. Yes. I think -- first, I think the  
17                  important thing again is to decide what you're managing  
18                  the forests for and whether you're trying to meet the  
19                  needs of the Industry or whether you're trying to  
20                  manage the forest for what you think it should be  
21                  managed for.

22                  And by what you think it should be  
23                  managed for, I mean by what the people of Ontario think  
24                  it should be managed for, rather -- the forest has a  
25                  certain potential that it can produce and that should

1           be determined, what it's being managed for.

2                     Myself, I feel confident that the natural  
3           forest could supply the timber and the amount of timber  
4           slightly below the long-term sustainable yield level in  
5           the long run overall, assuming that we actually go into  
6           a method and determine what methods of natural  
7           regeneration would be successful and would work for the  
8           forest.

9                     Now, when the question is asked whether  
10          you can meet future demand, well, that's an easy  
11          question in a way because I may not be here in the  
12          future or you may not be here in the future, so we  
13          can't hold each other responsible for any future,  
14          future prediction that's made that way, particularly  
15          when we're talking about rotations of a hundred years  
16          or so, so it's very easy to say yes or no it can or  
17          can't be met, because it's going to change, what is  
18          that future demand, trying to predict that demand at  
19          this time is going to change considerably.

20                   The basic changes that are going to  
21          affect the demand for wood from Canada that we really  
22          don't have any control on if you're a unit forester is  
23          really, we're selling wood on a world market and it  
24          really depends how competitive we are in that world  
25          market. How competitive we are in that world market

1 depends upon how cheaply our wood's produced, what the  
2 value of our dollar is, and it also depends upon  
3 changes in technology and the supply of timber from  
4 other areas of the world. They can all affect our  
5 position in the future.

6                   And so when the question is asked: Can  
7 we meet future demand, I can't answer it that way, but  
8 I think I can answer it from the point of view: Can we  
9 supply that level of wood from the level of wood that's  
10 there - yes, I could say yes to that - but whether that  
11 level of wood is really going to be used will depend  
12 upon our competitive position in the world.

13                  And if -- to meet future demand, that's  
14 why I would recommend that we move more into the  
15 extensive management option rather than the intensive  
16 management because it puts us in a more competitive  
17 position from the point of view of producing cheaper  
18 wood.

19                  And if you look at wood supply around the  
20 world, the predictions for wood supply around the world  
21 is -- the latest prediction I read is that they aren't  
22 expected to decline, in fact they're expected to  
23 increase. So we're going to be competing on a market  
24 where markets are increasing, but also the wood supply  
25 is not increasing either around the world, so we're in

1           a competitive market type of situation.

2                 The natural forest, can it supply the  
3           amount? I think it can supply the amount slightly  
4           below the long-term sustained yield level as I showed  
5           in one of the earlier tables as long as we learn the  
6           methods for regenerating that forest naturally.

7                 MR. FREIDIN: I'm sorry, was that  
8           successfully or was it naturally?

9                 MS. SWENARCHUK: Naturally.

10                MR. FREIDIN: Thank you.

11                MS. SWENARCHUK: Could you try to speak  
12           more directly into the microphone, Mr. Benson.

13                THE WITNESS: Sure.

14                MS. SWENARCHUK: People are having  
15           trouble hearing.

16                Q. Turning to Chapter 6 which deals in  
17           more detail with planned natural regeneration and  
18           economic concerns, you indicate on page 77, starting in  
19           the second line that:

20                "Conventional economic analysis of the  
21           worth of doing intensive silvicultural  
22           projects indicate that intensive  
23           silvicultural operations in Ontario  
24           cannot be carried out at a profit. The  
25           Canada Land Inventory indicates the

1 majority of the land in the area of the  
2 undertaking as classified is in the lower  
3 categories of moderately severe  
4 limitations to the growth of commercial  
5 forests, class 4; (2) lands that have  
6 severe limitations which preclude the  
7 growth of commercial forests, class 7."

8 Now, this morning, Mr. Benson, we  
9 provided the Board with copies of Exhibit 1612. Do you  
10 have a copy?

11 A. Yes, somewhere. I don't know where.

12 Q. Does yours have the colours. You  
13 take mine, here. (handed) And this is described as  
14 Canada Land Inventory, Land Capability for Forestry,  
15 Ontario. And can you describe what the map indicates  
16 by colour, please?

17                           A. Well, the map is indicating three of  
18                           the top categories in the Canada Land Inventory and  
19                           it's indicating also the area that was covered by the  
20                           inventory.

21 So it's the area within the dashed lines.  
22 If you look at southern Ontario, it goes all the way up  
23 to -- past Kirkland Lake within that white area. The  
24 white area there that was surveyed indicates it's in a  
25 class below class 3; in other words, the majority of

1       the lands in the northern Ontario that has been  
2       classified is in a class that is lower than having a  
3       moderate limitation to the growth of commercial  
4       forests.

5                   And similarly --

6                   MADAM CHAIR: Excuse me, Mr. Benson.

7                   Most of Ontario hasn't been classified at all.

8                   THE WITNESS: By the CLI, no.

9                   MADAM CHAIR: Was this a forestry survey?

10                  THE WITNESS: The Canada Land Inventory  
11                  was --

12                  MADAM CHAIR: Why did they concentrate in  
13                  southern Ontario?

14                  THE WITNESS: I don't know why they did  
15                  that entirely, they didn't have to. The Canada Land  
16                  Inventory was an inventory done -- performed across  
17                  Canada for timber, wildlife, recreation and  
18                  agriculture. Each province of course in Canada's  
19                  unique way approached the survey differently and wanted  
20                  to have a hand in it; some wanted to cooperate with the  
21                  federal government, others wanted to do it their  
22                  particular way and then give the data to the  
23                  government, so -- and the government had the  
24                  responsibility of trying to pull it altogether.

25                  In Ontario they did the survey work,

1 according to the provincial way, and did a survey  
2 called the Ontario Land Inventory that covers timber,  
3 land capability, wildlife, recreation. That same data  
4 was then used by the federal government to compile the  
5 data for the Canada Land Inventory.

6 The Ontario Land Inventory covers more of  
7 the province. Why the federal government didn't use it  
8 to compile more of the data for Ontario, I don't know,  
9 but the data is there for the Ontario Land Inventory.

10 It's just that the federal government  
11 produced better maps than the provincial government and  
12 did summarize their data for the province in this  
13 particular form. So it's easier to look at this way.

14 MR. MARTEL: Could I go back then. That  
15 white area signifies what?

16 THE WITNESS: That signifies land that's  
17 of a lower class than class 3, that green area. So  
18 when you look at that class 3 it's described as:

19 "Lands in this class have moderate  
20 limitations to the growth of commercial  
21 forests."

22 So it's in a class that is lower than  
23 - - moderate limitations to growing commercial forests.

24 MADAM CHAIR: But it doesn't exclude  
25 forestry on that?

1                   THE WITNESS: I'm sorry?

2                   MADAM CHAIR: Forestry isn't excluded in  
3 the white areas, obviously.

4                   THE WITNESS: Forests are not excluded,  
5 no.

6                   MADAM CHAIR: Forestry. Obviously  
7 forestry takes place in the white areas, but they're  
8 trying to indicate which are the most productive forest  
9 areas?

10                  THE WITNESS: That's right, that's right.

11                  MADAM CHAIR: Okay.

12                  MR. MARTEL: Well, what would they  
13 call --

14                  MS. SWENARCHUK: Q. Mr. Benson, what  
15 conclusions do you take from --

16                  MR. MARTEL: Can I --

17                  MS. SWENARCHUK: Sorry.

18                  MR. MARTEL: What do you call the area  
19 that, for example, that Eddy Forest occupies. You  
20 know, I looked around Espanola and right up through to  
21 almost Timmins, which is a large chunk of Eddy's  
22 property. What would we classify that as then?

23                  I mean they're producing, I mean they're  
24 cutting, but this thing says moderate -- lower than  
25 class 3, and class 3 says, moderate limitations to the

1       growth of commercial trees. I don't know what kind of  
2       trees we're growing in there then if they're not  
3       commercial trees.

4                     THE WITNESS: Well, what they mean by  
5       commercial trees, if you're trying to grow a plantation  
6       back in the area, can you afford to grow that  
7       plantation.

8                     When the CLI drew up their classification  
9       for these areas they assigned increment levels to the  
10      different categories and they based that, strangely  
11      enough, upon red pine plantations, and so they were  
12      looking at it from the point of view if you're trying  
13      to grow red pine plantations, what level would it fill;  
14      one -- and they had seven categories actually, 1 to 7 -  
15      so the white areas really are in classes 4 to 7, but  
16      have certain increment levels, and what they're saying  
17      is, is that the volume that could be produced from  
18      those lower classes would not be justified  
19      commercially.

20                  MR. MARTEL: Then if I asked a very  
21      simplistic question though, we don't grow red pine up  
22      there very extensively, we grow jack pine, and I'm  
23      having difficulty with whoever drew this map up - I'm  
24      not suggesting you did it - but suggesting that we're  
25      talking about red and white pine in an area that, if I

1 listened to Mr. Marek for a month, he said you try to  
2 regrow in an area what was there.

3 Now, why are we taking a basis for our  
4 growth of red pine or white pine in an area that grows  
5 jack pine or black spruce?

6 MADAM CHAIR: Excuse me, Mr. Benson. You  
7 can see the Board has some skepticism about the map and  
8 perhaps you could just make your comment quickly on  
9 what point you wanted the Board to get out of it.

10 THE WITNESS: Sure. Well, the people in  
11 B.C. have even more of a problem.

12 MR. CASSIDY: Good for them.

13 THE WITNESS: But what it's trying to  
14 show is what is the productive capability of the land,  
15 and by using red pine they were merely trying to put it  
16 on a scale, they weren't saying that you plant red pine  
17 on the area.

18 And if you actually take a look at the --  
19 they have maps 1:250,000 that they produced it on, and  
20 on their maps they actually do say for the particular  
21 zones and categories that they have what species are  
22 the recommended species for those particular areas. So  
23 in the area you're talking about it wouldn't be red  
24 pine, it would be jack pine or whatever the most  
25 appropriate species is. But the -- they were trying to

1 put the -- assign a level of production to the  
2 different areas of Canada to show what are the most  
3 productive areas in Canada.

4                   The only point I would get from a map  
5 like this, which I guess is the main point, is that the  
6 level of production is relatively low and that can be  
7 established in different ways, and this merely shows  
8 the same point; there are areas that are more highly  
9 productive, but there's not too many of them in  
10 northern Ontario.

11                  MR. MARTEL: I guess that's what  
12 triggered my questions, because if you look at other  
13 block, areas not classified by the forest inventory,  
14 that covers the rest of northern Ontario, we're in bad  
15 shape in northern Ontario, according to this map. I  
16 didn't realize we were in this much trouble.

17                  THE WITNESS: Well, I don't think it  
18 spells trouble.

19                  MR. MARTEL: No, I'm simply saying that  
20 if one just looks on the face of it.

21                  THE WITNESS: I think what it shows  
22 though is a realistic picture of the productivity of  
23 the land, that it's not highly productive land.

24                  Like, if you compare it to southern  
25 Ontario, it's certainly in a different category. It's

1       not saying that it's impossible, but it's saying we  
2       have certain restrictions. That's really all it's  
3       saying.

4                   MADAM CHAIR: I guess the Board is just  
5       saying it's sort of beside the point to see the most  
6       productive land for forestry is around Toronto when  
7       most of the area of the undertaking has not even been  
8       inventoried.

9                   So we're just saying we don't find it all  
10      that much useful, but we understand the point you're  
11      trying to make is that all of northern Ontario is not  
12      classified as being particularly productive for--

13                  MR. CASSIDY: Red pine.

14                  MADAM CHAIR: --growing forests?

15                  THE WITNESS: For growing forests. No,  
16      it's not --

17                  MADAM CHAIR: Commercial forests.

18                  MS. SWENARCHUK: Yes. It would be  
19      helpful if counsel would stop interrupting quite as  
20      much.

21                  MR. CASSIDY: Nobody interrupted.

22                  THE WITNESS: I can answer questions from  
23      the audience too, it's no problem.

24                  MS. SWENARCHUK: Q. Go ahead, Mr.  
25      Benson. Go ahead.

1                   A. Should I answer the question from the  
2         audience about red pine. As I said, it's not just for  
3         red pine, red pine was just used as a representative  
4         species for the area.

5                   Q. For the purposes of the Board, I  
6         think it would be helpful if you would - and perhaps  
7         you've already done this - you've said, as far as  
8         you're concerned, what the map represents is that  
9         Ontario's northern forest lands are not very productive  
10       lands.

11                  MADAM CHAIR: If your point is going to  
12       be any more than that, Ms. Swenarchuk -- if that's the  
13       only point we have to make from this map, I think we  
14       can go on, unless a large portion of your evidence is  
15       relying on it?

16                  MS. SWENARCHUK: No, certainly not.

17                  MADAM CHAIR: Let's go on.

18                  MS. SWENARCHUK: If there's anything you  
19       want to add to that with regard to species, Mr. Benson,  
20       please feel free.

21                  MADAM CHAIR: I don't think the Board is  
22       particularly interested in hearing it.

23                  THE WITNESS: Sure.

24                  MS. SWENARCHUK: Q. Okay. On page 78  
25       of the witness statement, you indicate in the third

1 paragraph that:

2                    "The low stumpage, low yields per hectare  
3                    and long rotations contribute to the low  
4                    economic return expected from the average  
5                    forest site in Ontario."

6                    Would you expand upon that, Mr. Benson,  
7 why have you concluded that there will be a low  
8 economic return from the average forest site in  
9 Ontario?

10                  A. Well, really based upon those three  
11 factors that I stated: Low stumpage, the amount of  
12 return that the government asks for their -- in payment  
13 for the trees that they produce or have produced.

14                  The low yields per hectare, really that's  
15 related to the map I was showing or the average yields  
16 for Ontario. Different studies show what the yield for  
17 Ontario is, it's a figure I used before, the 1.7 cubic  
18 metres per hectare per year from Bickerstaff, et al.

19                  And the long rotations, the fact that we  
20 have to grow trees with the long rotation on our areas  
21 because we're in the north, at least in Thunder Bay  
22 we're in the north I think, and trees do grow slower  
23 there than what they do around Toronto.

24                  Q. Now, on the next page at the top you  
25 have quoted from the Ontario Economic Council, stating:

1           "All the procedures which promote the  
2           establishment of the second crop, except  
3           planting which is economically feasible  
4           in only a few locations, are related to  
5           the cutting of the timber and must  
6           therefore be practised by the Industry."

7           Do you agree with that statement?

8           A. Yes, I agree with that statement.

9           Q. And the Council went on to say:

10          "If the government is to insist on the  
11          proper regeneration of an area, it must  
12          have funds to pay for the work undertaken  
13          in this regard and the necessary funds  
14          must come, as far as possible, from the  
15          operation of the mature timber taken from  
16          the area."

17          Do you agree with that statement?

18          A. Yes, I would.

19          Q. Now, could you assist the Board with  
20          examples from Alberta and British Columbia with regard  
21          to how silviculture in those provinces is funded and  
22          related to the area treated?

23          A. Well, basic -- this statement from  
24          the Economic Council is saying basically that the  
25          funding for the silvicultural work to come from the

1       stumpage which basically is what happens in the  
2       Province of Alberta where the companies are responsible  
3       for the silvicultural work, according to the forest  
4       management agreements that they signed there. In  
5       return, they may get a reduction in stumpage, but they  
6       still end up paying some stumpage plus doing the  
7       silvicultural work. If they don't do the silvicultural  
8       work, the government will do it and the company must  
9       pay the government for doing the work. So most of the  
10      companies would go with doing the work themselves.

11                  In B.C. it's changed recently and it's  
12      hard to find out details on it, but as much as I  
13      understand it, is that they're switching to a system  
14      whereby the companies must pay for doing the  
15      silvicultural work, and they have had a variety of  
16      systems there some of which have been situations where  
17      the companies would get a reduction in their stumpage,  
18      the amount they pay for the wood, in return for doing  
19      the silvicultural work on an area, which is somewhat  
20      different than Ontario where we don't quite have the  
21      same system.

22                  Q. Now, on page 80, Mr. Benson, in the  
23      second paragraph on the page you've said:

24                          "About 70,319 hectares (33%) of the  
25      213,847 hectares of cut-over are treated

1                   Intensively in Ontario. Increasing the  
2                   amount of area treated intensively will  
3                   only increase the amount of the subsidy."

4                   Now, subsidy to whom, Mr. Benson?

5                   A. The subsidy in that case would be to  
6                   whoever harvests the wood.

7                   Q. And can you explain for the Board why  
8                   you describe that as a subsidy?

9                   A. Well, yeah, it's - I'm not too sure -  
10                  a subsidy is a subsidy, I guess. But what we're doing  
11                  is, if you're going into intensive forestry in Ontario  
12                  and you're asking the government to pay for the cost of  
13                  regeneration and you're not going to recover the costs  
14                  of that regeneration either directly, or if consider  
15                  interest payments in the future, well then, you're  
16                  subsidizing that particular interest, or that  
17                  particular industry.

18                  In a sense, I think an analogy was made  
19                  back a few years ago in Thunder Bay by a person where  
20                  he equated it to: It would be nice if the government  
21                  would replace the inventory in his store. If we had a  
22                  store and the government would come along and replace  
23                  the inventory for him at the government's cost instead  
24                  of him buying the inventory.

25                  And in a sense that equates to what we're

1       doing to the forest. If we're paying for the  
2       regeneration costs and not recovering those costs or  
3       the interests involved in that for growing that forest,  
4       we're subsidizing the industry from that point of view.

5                   There's two ways that you can take a look  
6       at that particular problem and two ways that have been  
7       looked at. One argument is to consider investing in  
8       the forest as a cost; in other words, the stumpage that  
9       you get, how much money you take in in a year you  
10      should invest that back in silviculture, or the  
11      management of the forest and manage it that way, just  
12      as a cost based on a year-by-year level.

13                  Well, even if we did that we're spending  
14      more on the forest than what we're getting back from it  
15      from timber. So that there's another reason why I say  
16      if we try to treat one hundred per cent of the area, we  
17      really couldn't do it, we'd be going on, increasing the  
18      expenses that much higher.

19                  If you consider it as a normal type of  
20      investment, the same way I think we would look at it,  
21      if you invest in something you expect to make a certain  
22      interest on that money you invest. Well, then the  
23      situation becomes even more dramatic, it becomes even  
24      more difficult to make a profit on it the present way  
25      and it becomes more of a subsidy in effect, that the

1       dollars that we're spending on silviculture now are  
2       representing more of a subsidy in the long run.

3                     MADAM CHAIR: Mr. Benson, have you  
4       examined what the comparable level of stumpage fees are  
5       in Alberta and British Columbia as compared to Ontario?  
6       We have evidence before us that there is a large range  
7       in Ontario and it depends on lots of factors. But do  
8       you have a sense of whether stumpage charges are higher  
9       or lower in those two provinces?

10                  THE WITNESS: Stumpage figures are lower  
11       in Alberta generally, and for comparable species in  
12       B.C. they are probably lower also, but basically  
13       because the companies are paying for the silviculture  
14       cost--

15                  MADAM CHAIR: Thank you.

16                  THE WITNESS: --in most cases. B.C., I'm  
17       not quite as clear about just how -- they have  
18       different licensing systems in B.C. and they have  
19       changed their method of looking at their stumpage in  
20       that province also.

21                  If you look across Canada, Ontario has  
22       probably has one of the higher stumpage rates of all  
23       the provinces I would think, if you compare it that  
24       way. I have seen the figures for last year, but I  
25       can't remember them province by province.

1                   MADAM CHAIR: Thank you.

2                   Shall we take our afternoon break, Ms.

3                   Swenarchuk?

4                   MS. SWENARCHUK: If you wish.

5                   MADAM CHAIR: All right. We will be back  
6                   in 20 minutes.

7                   ---Recess taken at 2:45 p.m.

8                   ---On resuming at 3:10 p.m.

9                   MADAM CHAIR: Please be seated.

10                  MS. SWENARCHUK: Q. Mr. Benson, you have  
11                  stated on page 80 of your witness statement in the  
12                  second paragraph that:

13                  "It is unlikely that the government will  
14                  be able to provide the amount of funding  
15                  necessary to intensively manage all the  
16                  forest land."

17                  What is the basis of that conclusion, in  
18                  your view?

19                  A. Basically it's what I was saying  
20                  before, that with the present funding we're not  
21                  treating all the area, we're only treating about a  
22                  third of the area intensively, and even at that we're  
23                  spending more money than what we're bringing back in on  
24                  a year-by-year basis.

25                  So there's just that point: Can the

1 government afford to spend, say, three times as much  
2 for regenerating the forest or subsidized forests, as I  
3 put it and others would put it, particularly when other  
4 people -- when we're going through a recessional period  
5 such as we are now in Canada, I can't see that it would  
6 sell very well.

7                   The other point there too is, is that  
8 government funding is like the bouncing ball, it goes  
9 up and down, up and down for forestry. Government  
10 funding has relied upon provincial and federal funding  
11 and it's not a very reliable way to run any type of  
12 business to rely on that type of funding where you have  
13 to keep going to beg for funds every year or to try to  
14 justify funds every year; there should be a better,  
15 more consistent way set up to fund it.

16                   And I think you can only set that up if  
17 you were setting it up on a system that was going to be  
18 profitable to the forest, or show that it could make a  
19 profit.

20                   MS. SWENARCHUK: Question, Mr. Martel?

21                   MR. MARTEL: No. I was just going to  
22 say, we have to get rid of socialism.

23                   MS. SWENARCHUK: I didn't know we had it.

24                   MR. CASSIDY: Wait and see.

25                   THE WITNESS: Well, I don't think

1 socialism has to be at a cost either.

2 MS. SWENARCHUK: Socialism with a capital  
3 space.

4 MR. CASSIDY: Hang on to your hat.

5 MS. SWENARCHUK: Q. Page 81, Mr. Benson,  
6 you've stated in the second paragraph:

7 "The utilization of species has  
8 varied...", let me start before that.

9 The second paragraph reads:

10 "The longer rotations of the species  
11 grown in the area of the undertaking  
12 makes it difficult to know with any  
13 degree of certainty what the future  
14 demand will be for each species.

15 The utilization of species has varied  
16 considerably over time and it is unlikely  
17 that the same species will have the same  
18 use in the future."

19 Now, I want to direct your attention to  
20 statements made to the Board by Industry  
21 representatives, and I'll just read briefly three  
22 statements on page 29 of the Industry Panel 1 witness  
23 statement of Mr. Boswell - and they're all in the same  
24 vein - and the statements are:

25 "Due to the extreme variance in fiber

1                   properties between species, it would be  
2                   difficult to respond quickly enough in  
3                   the marketing and development areas to  
4                   compensate for a major change in wood  
5                   species from that in the current wood  
6                   supply."

7                   In the next paragraph he says:

8                   "Softwood has been and will continue to  
9                   be the backbone of the Canadian pulp and  
10                  paper industry for the foreseeable  
11                  future."

12                  And he said further on the same page:

13                  "Forestry strives to ensure that a stable  
14                  supply of wood in our traditional species  
15                  mix will be available in perpetuity."

16                  Now, that position of the Industry  
17                  appears to be different than the position you stated on  
18                  page 81, and I wonder if I could have your comments on  
19                  that, Mr. Benson?

20                  A. Yes. I don't know what he meant by  
21                  foreseeable future, but the last statement there that  
22                  referred to perpetuity of traditional species mix, I  
23                  have trouble really agreeing with that because, in my  
24                  experience and looking at a management unit, the use of  
25                  timber from a management unit has changed over time

1 what the demands for that wood have been. Technology  
2 is changing rapidly and I can see changes more likely  
3 to occur in the future than in the past.

4 So I can't see traditional uses applying  
5 that way, and I guess it's a matter of opinion, you  
6 know, that is his particular opinion that he has drawn,  
7 but it's certainly not the opinion that I would draw  
8 from that.

9 I guess the other thing too, if you look  
10 back at page 79, you know, I think it relates to  
11 economics. If it was so important -- Anderson pointed  
12 out there that the Industry hasn't been investing their  
13 own money in the regeneration of the forest in the past  
14 and if it was that important they would be investing in  
15 the regeneration with their own money, if it was that  
16 important to them, and that hasn't been occurring to  
17 any appreciable extent, even though it is a tax  
18 reduction too.

19 Q. Now, the next section of Chapter 6  
20 has to do with natural regeneration and use, and you  
21 have said on page 82 that:

22 "These areas that were not available...",  
23 and this is about halfway down the first paragraph:

24 "These areas that were not available for  
25 regeneration treatment prior to 1981 and

1                   the areas not classed as other than  
2                   cut-overs since 1981 will probably  
3                   regenerate to some species, however, they  
4                   may regenerate to a different working  
5                   group than desired and they may require a  
6                   longer rotation period than used in the  
7                   management plans."

8                   What's your basis for concluding that  
9                   these may regenerate to a different species and require  
10                  a longer rotation period?

11                  A. The sentence probably would have been  
12                  better if it was "or" instead of "and". They could  
13                  regenerate to a different working group, for example,  
14                  if you have spruce replaced by balsam fir or by poplar.

15                  Require longer rotation period than used  
16                  in the management plans, if say the spruce stand  
17                  regenerated back to spruce but it took a longer period  
18                  of time to regenerate back to spruce than what they had  
19                  considered in the plans.

20                  Q. Now, on page 93 in Figure 6-5 you  
21                  outlined the area of Crown land cutting in Ontario from  
22                  1978 to 1988 and the type of treatment it received, and  
23                  then that information was the basis of Exhibit 1611  
24                  which was distributed this morning which attempted to  
25                  summarize the data in Figure 6-5.

1                   And can you summarize for the Board what  
2                   Exhibit 1611 indicates and your views on this question?

3                   A. Exhibit 1611, Summary of Figure 6-5,  
4                   indicates for the 10 years involved what the total area  
5                   harvested would be or was for Ontario and what amount  
6                   of that area was artificially regenerated, what amount  
7                   of it was declared as natural regeneration,  
8                   silvicultural effort, and what amount of it would be  
9                   unplanned or unaccounted for as far as the silviculture  
10                  indications go for Ontario.

11                  So basically it indicates that over one  
12                  half of the harvested area falls within that unplanned  
13                  category, or less than half is planned type of  
14                  regeneration of some form or other.

15                  Just based on that, goes back to the  
16                  earlier chapter there, if you're managing an area you  
17                  have to replace what you're harvesting by some means or  
18                  other, whether it's natural or artificial, but it  
19                  certainly should be planned for.

20                  Q. What total do you take from that  
21                  figure then? What is the proportion of land now being  
22                  harvested or harvested during this time period which in  
23                  fact is regenerating naturally, whether in the planned  
24                  or unplanned way? This is for the time period 1978 to  
25                  '88.

1                   A. Well, if I looked at it that way,  
2 assuming that all the unplanned area is regenerating  
3 naturally to some species, which it probably is for the  
4 most part, then the amount of area that's being  
5 regenerated naturally is approximately three quarters  
6 of the total cut area.

7                   Q. Now, on page 83 of your witness  
8 statement you've indicated, in your argument in favour  
9 of extensive management, in the last line of the  
10 paragraph:

11                  "The relative impact of extensive  
12 management would be to produce smaller  
13 overall negative effects on the other  
14 resources of the forest, as well as  
15 provide more acceptable management to the  
16 people of Ontario."

17                  And you've referenced for that statement  
18 to your own article of this year, which is currently in  
19 press with Forestry Chronicle, The Potential for  
20 Integrated Resource Management with Intensive or  
21 Extensive Forest Management, Reconciling Vision with  
22 Reality, The Extensive Management Argument, and that  
23 article appears in the source book.

24                  Without turning to it, or we can turn to  
25 it if you choose, could you summarize for the Board why

1       you are of the opinion expressed here with regard to  
2       the advantages of extensive forest management?

3                    MR. FREIDIN: Well, Madam Chair, to the  
4       extent that the witness' answer might deal with why or  
5       why it may not be advantageous to wildlife, fish or any  
6       of those non-timber values, I don't think this witness  
7       has been qualified as an expert to deal with those, and  
8       I would rise now to make that position known clearly  
9       and ask the Board to keep that in mind when you're  
10      hearing the evidence.

11                  If he does indicate that he wants to talk  
12      about that area, I would like a ruling from the Board  
13      as to whether he's qualified to deal with that.

14                  MS. SWENARCHUK: Well, Madam Chair, I  
15      think implicitly the foresters who have testified  
16      before you, of whom there have been many, have  
17      frequently referred to their experience or reading in  
18      the areas of effects of timber management on other  
19      resources, and I think Mr. Benson is as qualified as  
20      they are.

21                  I don't know that this would be an  
22      extensive or - extensive - a large part of his  
23      response, but I think to the extent that he wishes to  
24      refer to such issues, that evidence is admissible and  
25      the Board can consider later the weight to be attached

1 to it and take into account in that decision the issues  
2 of Mr. Benson's qualifications in that specific area.

3 MADAM CHAIR: Where is the article?

4 Actually I'm lost on which page we're on, Ms.  
5 Swenarchuk.

6 MS. SWENARCHUK: Oh. We're on page 83 of  
7 the witness statement.

8 MADAM CHAIR: That's where I am.

9 MS. SWENARCHUK: Reference 145 refers to  
10 the article which is in the source book, it's Benson,  
11 '90.

12 MADAM CHAIR: Are you really suggesting,  
13 Mr. Freidin, that Mr. Benson can't say anything about  
14 integrated resource management?

15 MR. FREIDIN: I'm saying the extent to  
16 which he may -- his detail that he gets into in talking  
17 about the effect of timber management on wildlife, he's  
18 not a wildlife biologist and hasn't been qualified as  
19 an expert in that, or in fisheries management.

20 He can talk about integrated resource  
21 management, but the extent to which he's going to do  
22 so, and if he's written an article that proceeds to  
23 analyse the effect of timber management on wildlife, I  
24 suggest that he's not an expert in that area.

25 MADAM CHAIR: Have you read the article,

1       Mr. Freidin?

2                   MR. FREIDIN: I have scanned it.

3                   MADAM CHAIR: Well, I haven't, so I have  
4       no idea whether Mr. Benson is going to be referring  
5       specifically to non-timber values.

6                   Let's hear your answer, Mr. Benson. And,  
7       Mr. Freidin, you jump to your feet if you have an  
8       objection and we'll make a ruling.

9                   MS. SWENARCHUK: Well, I would like to  
10      say in advance, Madam Chair, that the parties have all  
11      had Mr. Benson's witness statement for some time,  
12      they're all aware that the statement is ultimately in  
13      Volume I concerned with integrated resource management,  
14      both the timber side and the non-timber side of forest  
15      management planning, and there has been no objection to  
16      this moment to any of the content of this witness  
17      statement or any suggestion that Mr. Benson, who is a  
18      professor who teaches forest management planning and  
19      some of whose students have appeared before you as  
20      witnesses for the Ministry to talk about forest  
21      management planning, suddenly is not qualified to talk  
22      to the extent that he finds necessary to explain his  
23      position to you on issues related to integrated  
24      resource management.

25                  MR. MARTEL: Could I just ask a question.

1       Am I right in recalling that MNR in their evidence  
2       indicated that the district manager makes the final  
3       decision, and he's not necessarily a biologist, but  
4       ultimately he makes the final decision based on what he  
5       considers correct after listening to biologists and so  
6       on. So I find it a strange position.

7                     MS. SWENARCHUK: Yes. You've heard a  
8       long succession of foresters for both the Ministry and  
9       the Industry - and leaving aside the Industry  
10      foresters - certainly Ministry foresters I think have  
11      repeatedly told you that they are involved in the  
12      process of integrated resource management - and if they  
13      aren't, then we're in worse, we're in bad shape in this  
14      province - and that they are involved in making  
15      decisions constantly and that's their job, conflict  
16      resolution about these issues is precisely their job,  
17      and that's what Mr. Benson has come before you to  
18      testify to.

19                     And it's our position, and I would  
20      similarly ask for a ruling on this, that he's entitled  
21      to express to the fullest his opinions on those  
22      questions to you and you then, of course, will have the  
23      opportunity, as I say, to attach to them the weight  
24      that you, which at the conclusion -- the reason I would  
25      ask that Mr. Freidin not jump to his feet is that, of

1 course, I would like Mr. Benson to have the opportunity  
2 to explain his views fully without interruption as, in  
3 my view in this instance, it is Forests for Tomorrow's  
4 right that he do.

5 MADAM CHAIR: Well, Ms. Swenarchuk is now  
6 raising the issue of Mr. Benson as being qualified  
7 overall as having expertise in forest management, not  
8 only timber management, and that includes integrated  
9 resource management.

10 MR. FREIDIN: Madam Chair, I think the  
11 way that you propose--

12 MADAM CHAIR: No objections?

13 MR. FREIDIN: --the way that you propose  
14 to deal with it is sufficient. I think, let him deal  
15 with it. I probably won't jump to my feet and I will  
16 deal with it in the normal course through my  
17 cross-examination.

18 MADAM CHAIR: Thank you, Mr. Freidin.

19 Go ahead, Mr. Benson.

20 THE WITNESS: I wonder what the question  
21 was.

22 MADAM CHAIR: I forgot too. What was the  
23 question, Ms. Swenarchuk?

24 MS. SWENARCHUK: Yes. And since you  
25 didn't have the page either, Madam Chair, I will

1       certainly go back to --

2                   MADAM CHAIR: I was on the page, I just  
3       didn't know where you were.

4                   MS. SWENARCHUK: Page 83, the statement  
5       is:

6                   "However, the relative impact of  
7       extensive management would be to produce  
8       smaller overall negative effects on the  
9       other resources of the forest as well as  
10      provide more acceptable management to  
11      people of Ontario."

12                  And you have referenced for that  
13       statement your article of 1990 which appears in Volume  
14       II of the source book as Benson, '90, No. 2, Madam  
15       Chair, Mr. Martel.

16                  Q. And I would like to give you this  
17       opportunity then to outline the basis of your argument  
18       for extensive management?

19                  A. Well, basically it was an extension  
20       of the article I did a year or two years before that on  
21       extensive -- called Extensive Management, The Need for  
22       Extensive Management in the Forestry Chronicle, and I  
23       was adding to that by considering the other resources  
24       in a relative sense, how do they add to that.

25                  And the argument I was making was -- as

1 shown by the initial article was that, extensive  
2 management was more desirable for a variety of reasons;  
3 one of the main ones being the economic reason, the  
4 fact that it would be cheaper overall for the Province  
5 of Ontario to go to extensive management.

6                   When it had to do with the other aspects  
7 of management, I considered them in the light of:  
8 Well, are they going to be increased or decreased as a  
9 result of extensive management, and I had to do that in a  
10 relative sense because the quantity of data wasn't  
11 available to do that.

12                  And of course I run into -- when you're  
13 involved in management, you run into the problem that  
14 Mr. Freidin points out, you're not a biologist and  
15 you're not a hydrologist and you're not this or that,  
16 but you're still managing all these resources and you  
17 have to make a decision. So you have to rely upon the  
18 knowledge base available if you're the resource manager  
19 and try to pull it together in the best way possible,  
20 and make a decision based on that information.

21                  So when I was writing the paper it's the  
22 same idea really, you pull together the information  
23 that you can and try to analyse the subject and come up  
24 with an answer that way.

25                  And for that particular paper what I came

1 up with, in my opinion and in my analysis, was that the  
2 extensive management alternative, which really included  
3 going for natural regeneration with smaller harvested  
4 areas, smaller clearcut areas than what we have at the  
5 present time, would provide for more of the other uses  
6 of the forest, some of those other uses of the forest  
7 being wildlife, aesthetics, the absent -- or the  
8 reduction of spraying; in other words, beneficial  
9 aspects of the other resources would be increased  
10 relative to managing the forests on an intensive basis.

11                   The quantity, I don't know by how much,  
12 but just relative -- as a relative type of analysis  
13 that I would say that the forests would be managed  
14 better by using the extensive management option,  
15 smaller areas, natural regeneration.

16                   Q. Now, you mentioned in your response  
17 less spraying. Why, in your view, would an extensive  
18 management approach entail less spraying. First of  
19 all, less spraying of herbicides or insecticides,  
20 which?

21                   A. Well, hopefully it would be both.  
22 They are somewhat related in the sense that both  
23 indicate that you've had a problem with regenerating an  
24 area if you have to resort to more extreme method,  
25 either to kill off a species or an insect that has come

1       about. With the insect, if you produced a crop that  
2       the insect likes, well it's a failure in a way from a  
3       management point of view.

4                     MADAM CHAIR: Excuse me, are you  
5       referring to something such as spruce budworm, that  
6       that reflect in any way a regeneration effort, other  
7       than we've received lots of evidence about the balsam  
8       component in a stand and what that can do with respect  
9       to spruce budworm, but you don't see insects and  
10      diseases being naturally occurring parts of the forest?

11                  THE WITNESS: Yes, I see them naturally  
12      occurring but I was thinking with the spruce budworm,  
13      the fact that the balsam component has increased in the  
14      boreal forest over time so it's made a habitat more  
15      suitable for the spruce budworm and it's created a  
16      foodbank for it, so it's made it -- made a situation in  
17      which the spruce budworm can take advantage of, and it  
18      represents a failure I think from the management point  
19      of view in that respect.

20                  MS. SWENARCHUK: Q. With regard to  
21      herbicides then, Mr. Benson, is it your view that the  
22      extensive management approach as you have outlined it  
23      would entail less use of herbicides?

24                  A. That's a difficult one to answer  
25      because hopefully it would, because hopefully you could

1 come up with the ways to naturally regenerate the area  
2 to the species you want without having to spray it with  
3 herbicides, and whether you could completely eliminate  
4 them or not is still a question mark in my mind's eye,  
5 there's more research that would have to be done in  
6 different areas to determine the complete answer to  
7 that one.

8 Q. Okay. But short of completely  
9 eliminating them, would you expect or not that there  
10 would be any decrease in the use of herbicides?

11 A. I would expect that there should be a  
12 decrease in the use of herbicides if you went to the  
13 extensive management option with natural regeneration  
14 method.

15 Q. Now, the next chapter of this -- the  
16 next section of this chapter deals with economic  
17 analyses of regeneration by the Ministry, and various  
18 portions of this will be dealt with in more detail by  
19 the economist in Panel 7, so we won't review all of it  
20 now, but if I could just ask you to turn your attention  
21 to page 84 with regard to value added.

22 In the second paragraph you have said:  
23 "The most significant point is that the  
24 value added does increase with intensive  
25 silviculture."

1                   And could you explain what you mean by  
2                   that and what the implications are of that?

3                   A. Well, I think the point behind that  
4                   is summarized in a couple of tables, in Tables 6.2 and  
5                   6.3 where it compares the -- I'm sorry, 6.1 and 6.2.

6                   MS. SWENARCHUK: These are on pages 94  
7                   and 95, Madam Chair.

8                   THE WITNESS: The basic explanation is  
9                   that value added really has nothing to do with  
10                  analysing the worth of a project; value added is a  
11                  measurement of the end production value rather than  
12                  measuring the worth of a silvicultural project.

13                  And in the particular table I've just  
14                  shown in Table 6.1, was the regeneration effort, more  
15                  intensive regeneration effort at \$25, that the value  
16                  added would be \$25 at that particular level. But then  
17                  the value of the standing tree also has a value added,  
18                  as a tree grows up and it gets a value, it would have a  
19                  value added of \$25.

20                  If you just compare those two rows to  
21                  Table 6.2 across on page 95, you see the regeneration  
22                  effort there, if we assume it was natural regeneration  
23                  at a cheaper level, the value added then is only \$1 at  
24                  the regeneration end of things, but then the standing  
25                  tree value added comes up to \$49.

1                   The point -- you know, the point is, is  
2                   that your total value added isn't going to change.  
3                   According to the costs and inputs that you put into  
4                   that, you could experience a loss, you could have a  
5                   negative value in there, but your value added total is  
6                   going to be the same.

7                   If you want to compare projects, they  
8                   should be compared on their particular basis, compare  
9                   the intensive to the extensive silviculture directly.  
10                  The value added has nothing to do with evaluating a  
11                  project or projects.

12                  MS. SWENARCHUK: Q. Now, what would it  
13                  mean to compare extensive versus intensive silviculture  
14                  directly?

15                  A. Well, I think the one article I did  
16                  in the Forest Chronicle, The Need for Extensive  
17                  Management, makes that type of comparison, where you  
18                  compare the different management alternatives.

19                  Q. And can you explain that a little  
20                  more fully for the Board, please?

21                  A. Well, in that article I compared  
22                  intensive to extensive management - it was written more  
23                  or less for Canada not just Ontario - I used Ontario  
24                  figures for silviculture, but I used an average yield  
25                  for Canada to make the point.

1                   And the point being that even with  
2 extensive management, with the lowest cost for  
3 regeneration, and assuming that it takes a longer  
4 period of time to produce a lower yield, it's very  
5 difficult to make a profit; whereas with intensive  
6 silviculture you end up with a loss on most of our  
7 land, unless your land is very productive and your  
8 stumping is fairly high, which makes sense.

9                   You're going to make more money on more  
10 productive land and you're going to make more money if  
11 you're being paid more for the wood; if you're trying  
12 to grow wood on land of low productivity at a high  
13 expense and getting a low price in the future for it,  
14 you're not going to grow it at a profit.

15                  Q. Now, on pages 86 and 87 you talk  
16 about the kind of economic analysis that was used in  
17 the Forest Production Policy, and then on page 87 the  
18 Forest Production Policy assumptions.

19                  Could you explain those sections briefly  
20 together with the figures that you use to illustrate  
21 them and what problems you see in those assumptions?

22                  A. Well, I guess the basic problem is  
23 they use value added again for evaluating the  
24 production of the forest crop, which is not a good way  
25 for evaluating between management alternatives, which

1       is what they were trying to evaluate, different ways or  
2       production policies for managing the forest.

3                     Q. And what's the problem with using  
4       value added, in your view?

5                     A. Well, value added doesn't really  
6       reflect the value of the wood that you're producing,  
7       that represents the value generated by the end product.

8                     I suppose if they wanted to evaluate and  
9       compare between industries, you might want to use value  
10      added as one of the inputs into making such type of  
11      analyses, but when you're looking at -- really what  
12      you're looking at options for managing the forest and  
13      trying to evaluate within those management options,  
14      value added to me would not be the main way to do that  
15      type of analysis.

16                    Within that analysis also they really  
17      didn't treat the natural regeneration option as a  
18      viable alternative and didn't include it or do an  
19      analysis on that natural regeneration alternative and,  
20      in fact if they had, it would come up with a  
21      benefit/cost ratio that would be better than the  
22      alternatives that they proposed.

23                    And that would be shown on page 96 -- I'm  
24      sorry, page 97 in Table 6.4 and where it's comparing  
25      the benefit/cost ratios of the different alternatives,

1 and I derived this from the Ministry -- the old  
2 Ministry Forest Production Policy of '72.

3 If you figure out the benefit/cost for  
4 the policy option 1, which they really just treated as  
5 - harvesting the area, if you figure out that  
6 benefit/cost it comes out to -- it would be infinitely  
7 large, mainly because they assumed that there was no  
8 cost.

9 If you assume that there was a cost of a  
10 dollar at least, well then you would still get a very  
11 large value. In other words, the benefit was  
12 infinitely high compared to the cost.

13 Q. And option 1 you've described on page  
14 96 was:

15 "To make no investment and provide over  
16 the orderly liquidation of the remaining  
17 commercial forests in Ontario,  
18 non-planned natural regeneration would be  
19 used to regenerate the forest."

20 A. That's right, yeah.

21 Q. Go ahead, please.

22 A. In the Forest Production Policy, and  
23 this has been mentioned by a number of other people,  
24 they've used rotations of 50 years which were really  
25 unrealistic in predicting what the future values were

1 going to be, and they use those in their benefit/cost  
2 analysis.

3 Table 6.6 on page 99, I did a calculation  
4 to show what the values would be if you assumed or if  
5 you assumed a rotation of a hundred years instead of 50  
6 years.

7 Q. And can you just take the Board  
8 through that table and indicate what your conclusions  
9 are on those figures?

10 A. Well, the conclusions are that they  
11 pretty well all lead to a negative return except for  
12 the first alternative at the different interest rates.

13 Q. And now are you looking at column 6?

14 A. Column 6, right.

15 Q. Yes. And policy option 1 would be in  
16 each case the one that involved only non-planned  
17 natural regeneration?

18 A. That's correct, row 1.

19 Q. Okay.

20 A. Row 1, not column 1.

21 Q. Yes, sorry, row 1.

22 A. I feel the point behind the type of  
23 analyses that have gone on is they tend to try to show  
24 the profitability of the forest, but in order to do so  
25 they have to use unrealistic end value figures, the

1       value added figures, which really is not the value that  
2       the province is selling the wood for.

3                     Q. All right. Moving on then to the  
4       last chapter of -- sorry, second last chapter of Volume  
5       I, Natural Regeneration, Ecological Concerns, you have  
6       indicated on the bottom of page 101 - and I will just  
7       ask you to expand upon it briefly, we won't go through  
8       every element of this chapter since it includes issues  
9       that the Board has heard testimony about from other  
10      people - but you've indicated here that:

11                     "Based on existing information, the most  
12       ecological reasons for favoring natural  
13       regeneration over artificial regeneration  
14       are the retention of species diversity  
15       and productivity of the site for all  
16       living organisms of the forest."

17                     I wonder if you could expand briefly on  
18       that paragraph, Mr. Benson?

19                     A. Yeah. Again, I'm not a biologist, et  
20       cetera, but when you're managing the forest, if you're  
21       trying to look at more than just the timber part of it,  
22       you have to have an understanding of: Well, what is  
23       required for these other resources.

24                     And based on what I have read and  
25       understood and talked to people and worked with other

1 people on is that if -- for a forest area, if you want  
2 to retain species diversity and productivity of the  
3 site, that natural regeneration could be favored over  
4 artificial regeneration, particularly in cases where  
5 you are going to have artificial regeneration on large  
6 clearcut areas.

7 Q. Could you summarize briefly your  
8 reasons for favoring natural regeneration and smaller  
9 cut sizes?

10 A. Well, that's sort of related to what  
11 I just said. Why would I favour small cut sizes and  
12 natural regeneration?

13 Q. Yes.

14 A. Well, that's really Chapter 6 and  
15 there's the economic reason, which I think is a strong  
16 motivating force for a start.

17 Q. What about ecologically then?

18 A. And then ecological reasons enter  
19 into it because of the fact that you are going to  
20 retain the natural forest, you're going to retain the  
21 species diversity, you're relying upon the natural  
22 trees that are there, the seed source that is there to  
23 regenerate the area.

24 Also, by using natural regeneration and  
25 smaller cuts you're creating more of the age effect --

1       or edge effect, rather, so you're -- which can be  
2       important for wildlife. And from the management point  
3       of view, if you can space your cutting pattern over the  
4       forest so you're also creating that diversity  
5       throughout the forest; in other words, create a  
6       diversity - you're not having your cuts side by side -  
7       but if you create them throughout the forest so you  
8       have wider variation between age-classes, between  
9       age-classes you're increasing your diversity that way,  
10      which I understand is better for wildlife, which is  
11      another advantage.

12                   So from the point of view of economics I  
13      think it's important, from the point of view of  
14      creating the diversity which favours wildlife, both the  
15      plant life and the animal species, I think it's  
16      important from those points of view.

17                   The other areas that can be important are  
18      from the point of view of: What's the overall effect  
19      on the site, and it's difficult to come up with some  
20      figures on this, like: What is the effect on the site  
21      of any one particular method of harvesting in the area  
22      and trying to evaluate that.

23                   The only thing I can figure out from the  
24      material that I have looked at and the areas that I  
25      have looked at is, is that you certainly are increasing

1       your chances of doing harm to the area if you're  
2       working with a larger area that you're cutting; whereas  
3       you're reducing possible negative effects that you may  
4       have by using a smaller cut for the area. And I'm  
5       thinking in particular, say, of erosion damage from the  
6       area or wind damage to the area. I would say erosion,  
7       water effects would be the two main elements in that  
8       particular area.

9                   Q. On pages 110, 111 and 112 you give  
10          some examples from other jurisdictions of cut sizes and  
11          regulations pertaining to cut sizes, and I would like  
12          to turn first to the Swedish example and specifically  
13          to an article in Volume II of the source book by  
14          Remrod. I think we just have time to look at this  
15          before four o'clock.

16                   MS. SWENARCHUK: Remrod.

17                   MADAM CHAIR: Is there more than one  
18          author of that article, Ms. Swenarchuk, I don't seem to  
19          have it under R? Peterson...

20                   MS. SWENARCHUK: Clearcutting and the  
21          Silviculture Experience, the Swedish example by J.  
22          Remrod.

23                   MADAM CHAIR: Is that the one you just  
24          gave me this afternoon, or this morning?

25                   MS. SWENARCHUK: No, it wasn't.

1                   MADAM CHAIR: Do we need this article  
2                   to --

3                   MS. SWENARCHUK: I think so, Madam Chair.  
4                   It's sort of small, so -- do you have --

5                   MR. MARTEL: Which one?

6                   MS. SWENARCHUK: It's right after the  
7                   Quebec excerpt. Do you have Quebec marked?

8                   ---Discussion off the record

9                   MS. SWENARCHUK: Perhaps I could find it.  
10                  I'm assuming your source book is in the same order.

11                  MADAM CHAIR: Yes, it will be in the same  
12                  order.

13                  MS. SWENARCHUK: Well, you don't have it.  
14                  MADAM CHAIR: We don't have it.

15                  MS. SWENARCHUK: It doesn't seem to be  
16                  there.

17                  MR. MARTEL: Maybe we can wait for  
18                  tomorrow.

19                  MS. SWENARCHUK: Can we break now and I  
20                  will make sure you have it tomorrow. Let me keep this  
21                  for a second.

22                  MADAM CHAIR: Yes, thank you.

23                  MS. SWENARCHUK: So we'll adjourn now  
24                  until nine in the morning.

25                  MADAM CHAIR: Yes. The Board will

1 adjourn for the day.

2 We can't find our article, so everything  
3 is grinding to a halt and we're coming back tomorrow  
4 morning at nine o'clock.

5 Thank you.

6 ----Whereupon the hearing adjourned at 3:55 p.m., to be  
7 reconvened on Tuesday, December 11th, 1990,  
commencing at 9:00 a.m.

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